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A STUDY OF JOB ATTITUDES IN THE
MANUFACTURING, CONTRACTING, AND
ACQUISITION OFFICER CAREER FIELDS

THESIS

Anthony P. Burns, Captain, USAF

AFIT/GCM/LSR/90S-1

DEPARTMENT OF THE AIR FORCE

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AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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The opinions and conclusions in this paper are those of the author and are not intended to represent the official position of the DOD, USAF, or any other government agency.

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THESIS

Presented to the Faculty of the School of Systems and Logistics

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Anthony P. Burns, B.S.

Captain, USAF

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Abstract

This study evaluates the job attitudes of manufacturing officers, contracting officers, acquisition officers, in comparrison with all other Air Force officers. The purpose of this research was to determine whether moving the organizational location of the manufacturing career group from the contracting organization to the acquisition organization would improve job attitudes. The Organizational Assessment Package, from the Leadership and Management Development Center, was used as the research tool and data source for this study. The results showed that there was no support for the assumption that manufacturing officer's job attitudes would increase due to reorganization, although there was evidence that their attitudes were similar to acquisition officers. Manufacturing, contracting, and acquisition officers as a whole have lower job attitudes than all the other Air Force officers. This is probably a result of inadequate training and education, over regulation of government procurement, and insufficient authority and responsibility for their work.

A STUDY OF JOB ATTITUDES IN THE MANUFACTURING, CONTRACTING, AND ACQUISITION OFFICER CAREER FIELDS

I. Background and Problem Orientation

Introduction

There are several career fields that manage the complex world of the United States Air Force procurement system. Two of the fields, manufacturing and contracting, have been managed under the same professional career developement program. Recently, Headquarters Air Force Systems Command determined that these two fields "were no longer aligned" (2), and that there was a need to realign the manufacturing career field in some manner (27:3). AFSC determined that moving the management responsibility for manufacturing officers under the Engineering organization would be the most effective method possible. They also speculated that such a move might improve the job satisfaction level of manufacturing officers. This study will examine the question of whether manufacturing officers' job attitudes would improve from such a move.

This first chapter will examine the history of government aircraft procurement for the impact of previous events on the system of today. Next, an overview of the calls to reform the intricately complex procurement system will be presented to highlight

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both the current shortcomings of the system and to show the pressing need for improvement. Then the specific roles and differences of manufacturing officers, contracting officers, and a combined officer group of engineers and program managers are included. Finally, the precise statement of research, assumptions and limitations are tendered.

A Historical Perspective of Government Aircraft Procurement

Weapon system procurement for the USAF has changed tremendously from the purchase of the first aircraft to the recent budget battles over the Stealth Bomber (4:24, 17:1) The history of the procurement system from the Wright Flyer to the B-2 provides us with great insight into the mechanisms, complexities and problems of this system today. A proper prognosis of the problems afflicting this field should help in diagnosing possible remedies for the ailments of today.

The Nature of the Market. After the Wright Brothers first flight and up until the time of World War I (WWI), there were many small shops that built airplanes. These planes were more of a hobby than a business. Then, the Army's enormous demand for airplanes during WWI helped establish many aircraft companies. After the war, many of these companies dissolved due to the reduced government demand and surplus of military equipment being sold in the civilian market. This cycle of "boom and bust" became an important characteristic of the Aerospace industry (7:17-18). Many businesses have avoided the defense market because of the unpredictable nature of this cycle. Many others have gone out of business due to the long periods of slow,

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or no, work. The end result of this phenomenon was that the U.S. Government determined that the industry would need to be supported through both legislation and special programs.

Defense Regulations. After WWI, many of the fledgling aircraft companies had to fight off the stigma of being the "merchants of death." There were also many accusations of price gouging and profiteering by the defense industries. This distrust of military contractors remains to this day. Similar recent occurrences of excessive prices in weapons systems have furthered this suspicion of the industry and of the people responsible for managing them. The result is numerous corrective and restrictive legislative acts aimed at preventing similar actions from happening in the future (10). These laws and their regulations may inhibit creativity in the procurement process and create numerous frustrations to those people charged with the responsibility of buying these systems today.

Government Support. The aircraft industry requires great amounts of capital to finance its research and development (R&D) projects. Since the government was not buying that many aircraft after WWI, there was fierce competition for relatively few contracts. Most of these companies' profits were reinvested into their R&D projects to stay competitive. However, those R&D costs would make their bid on the next government contract higher than someone who was not advancing the technology, or staying competitive with companies in other nations. The Kelly Air Mail Act of 1925 allowed the Postal Service to contract out to air transport companies to deliver mail across the country. The Army Air Corps Procurement Act of 1926 allowed the Army

to fund R&D projects for the aircraft industry. These two pieces of legislation had benefits in three areas: it advanced the state-of-the-art and quality of the planes, supported the new industry, and added more jobs to the economy (9).

These Acts began a relationship that exists to this day; the government provides various support programs to ensure that the United States has a viable and technologically advanced aerospace industry, both now and in the future. The result is that the U.S. has an industry capable of producing top quality aircraft that can help protect it against any potential aggressor. Meanwhile, the procurement officers have to walk a tenuous line between providing enough incentives for continued growth of the industry, yet maintaining enough fiscal responsibility to prevent excess profiteering by these companies.

During the depression, the government was supporting many aircraft industries to keep them going. This industry required massive amounts of capital to stay competitive, so many companies were merging with large corporations or banks to help finance them. These liaisons led to additional accusations of profit gouging and unfair competition, which in the end led to the passage of the Air Mail Act of 1934. This act limited the amount of profit a contractor could realize from a government contract. It also required that aircraft manufacturers divest themselves of their interest in transportation companies. The aircraft manufacturers of today are virtually a direct result of this divestiture (7:21-24).

Barriers to Entry and Exit. The reason that the same companies that produced military airplanes in the 1930's are still the only ones that produce them today is

because a system of barriers to both entry and exit have become a major characteristic of the industry. The barriers to exit include these companies' expensive capital equipment that is unique to the defense business. A labor force trained to produce to military specifications is too inefficient for commercial industry. The requirement for extensive layers of costly overhead in government contracting prevents many companies from having competitively low prices in a normal business environment. Finally, most defense contractors could not support the huge research and development departments necessary in military business but costly to a civilian business (24:46-48).

Barriers to entry into the defense industry are the inverse of the barriers to exit: the liabilities to exit are assets to entering the industry. The barriers to entry also include the requirement for vast sums of money to keep these companies going during the defense draw-back or cut-back periods. Another entry barrier is the extensive requirement for reporting systems among those doing business with the military, such as cost accounting systems. Understanding and gaining expertise in federal regulations, obtaining security clearances, and marketing the fact that your company is a viable new competitor are some other barriers to entry (24:48-50).

Management Reorganizations. After WWII, the emphasis in the industry shifted to jet aircraft and missiles. The nature of the business became more technical than it had been before. The new manufacturing processes and facilities required to build these modern weapons created a change in the methods of management of these companies. The program managers became those who were technically trained, yet management oriented. The number of administrative people required to run these

programs grew tremendously. Technical information management became a large part of this business. White collar workers began to outnumber blue collar workers (9).

These changes in the industry required that the government change their philosophy of management style. Defense Secretary McNamara reorganized the method by which the government managed the contractors in the 1960's. McNamara required the services to simply give the contractor a specification and then let them run the program. The government would just be the industry watchdog. The number of government personnel "watching" tripled (9).

During the 1970's, the government was heavily criticized for getting into Vietnam, funding costly weapon system failures, and for allowing profiteering by the defense industry. There were large cuts in the defense procurement system as voters forced a reduction in the industry. ". . . Congress no longer appropriated funds for Defense Department budgets without first scrutinizing those requests" (7:44) This loss of funds caused the government to seek out more efficient management methods to control contractors. A new strategy of active involvement in the design stage of weapon systems was created. The philosophy is that the government can discern, early in development, whether a program will fail, and it can keep the contractor on course before he takes costly diversions (3).

Recent Reforms. All of the scandals, overruns and criticisms of the Department of Defense's (DoD) management of procurement led to several initiatives aimed at reforming the process. Congress had passed many laws and regulations as mentioned earlier. Their interest in the everyday details of how the military manages the

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procurement business prompted criticisms of the Congress' effectiveness in solving

acquisition problems.

> A majority [of Contract Specialists] say that Congress "micromanages" DoD
> acquisition; that the acts, laws, and regulations they work under prevent them
> from performing their jobs in a timely manner; that the number and complexity
> of policies and policy letters cause needless confusion and inefficiency; and that
> the lack of guidelines on some issues causes inefficiency.
> A plurality say the current rules and regulations prevent the exercise of sound
> business judgement. (51:166-167)

Packard Commission. President Reagan established a Blue Ribbon

Commission in 1985 to study defense management and determine strategies to

improve it. This Blue Ribbon group became know as the Packard Commission

because David Packard was the chairman. This commission determined several

problems with the defense management system, and their recommendations have been

the focus of many of the more recent reforms. The major recommendations of the

Packard Commission were that the Congress needs to discontinue their practice of

attempting to legislatively control the "minutest aspects of DoD operations" and focus

instead on the larger issues of performance and defense posture (50:xiii). Furthermore,

they recommended that the military remove the excessive regulatory structures and

numerous management layers. The DoD can only be effective by using basic common

sense principles, maintaining small staffs with short lines of communication, and

giving people the authority and responsibility necessary to carry out their tasks, while

holding them responsible for the results (50:xiii).

Defense Management Review. When George Bush took over as President

of the United States, he directed his Secretary of Defense, Dick Cheney, to develop a

plan to implement the reforms that the Packard Commission and others had recommended for the DoD. The result of Secretary Cheney's planning is the Defense Management Review (DMR). It is more than simply a one time plan that the DoD is striving towards, rather, it represents their continual efforts towards improving all aspects of the military environment. One of the plans in the DMR is an idea to develop an "acquisition corps." The Air Force acquisition corps is defined as:

> A consolidated system for developing a corps of acquisition professionals in the sense of a group of people within the line of the Air Force associated in a common occupation rather than in an organizational element. (54)

This corps would have a more structured career path for acquisition (procurement) personnel than what is available today. Other recommendations of the DMR on acquisition professional development include requiring specific education and training for career progression as well as establishing a certification and qualification selection process (54).

Dr Fox's Suggested Reforms. There have been other significant criticisms laid against the DoD management practices by noted academicians. Professor J. Ronald Fox, of Harvard, has written two books on the problems at the Defense Department. He compared the DoD's management to civilian industry management and found several areas lacking. Fox agrees with many of the problems the Packard Commission reported, including the lack of authority, experience (both in acquisition itself and in the tactics and politics of the career), and education.

> There has always been an implicit assumption within the Defense Department that people with little or no advanced training and experience in the management of large industrial programs could function effectively at any management level. This assumption has been a key factor leading to the disappointing results of

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virtually every improvement program in the past twenty-seven years. If the complex defense acquisition process is to be managed more effectively and efficiently, the Defense Department must develop better trained and more experienced acquisition managers and support staffs to manage the complex, continuing negotiations between one part of government and another and between government and large industrial firms. (22:308, 311-312)

Gansler's Ideas. Jacques Gansler is another noted author on the need for defense reform. He found that Congress also contributes to the frustrations of procurement managers in their continual reviews of budgetary matters. The effort required of DoD personnel to satisfy Congress' voracious appetite for more and more information (budgetary and programmatic) leads to excessive inefficiencies of time, personnel, money, and program management (23:329, 332-333). Gansler also criticizes the government for its excessive regulations and micromanagement:

> It must be emphasized that regulation and incentives do not tend to go together; rather, they are antithetical, since regulation removes most natural incentives. The government, therefore, must create an environment in which both government employees and contractors have self-evident reasons for improving quality and lowering costs. Such incentives include promotions, profits, increased sales, and professional pride. . . . The need to be able to identify clear responsibilities is consistent with this broad approach of using incentives as the principle [sic] means of motivation. (23:331)

He cites many other reforms that are required in the procurement complex, such as streamlining the acquisition process; enhancing the quality of acquisition personnel; simplifying the procurement regulations; and allowing risk assessments in the budgetary process (23:330-335). Gansler argues that applying these and other reforms to defense acquisition practices could save the U.S. $50 billion a year (23:339).

Gansler uses an example of how the government buys fruitcake to show how inefficient the whole process is. First the government can not go to a grocery store

and pick out a fruitcake from those on the shelf. It cannot choose one based on prior performance or knowledge of similar high quality products. If the government were to do that it would be limiting a new business from entering the market, or the losing vendor would cry favoritism, bribery or worse. Therefore, the government has to ask for bids from anyone interested in making fruitcake. It had to create a specification, MIL-F-1499F (25:96) on how many nuts and various exact amounts of fruits that could go into the cake to ensure that at least a minimum standard of quality was met. The government specifies the baking temperature, time, and acceptable variations allowed on either of those areas. Then the government would accept bids on who could "build" their fruitcakes. Inspectors would have to be hired to determine whether each fruitcake submitted met the requirements of the specification and solicitation. Then the unfortunate contractor who wins the solicitation would probably have to build his own factory just to make this government defense fruitcake in, because it would be too wasteful to have to add the overhead costs to his commercial business (26). Even after the winner is determined, a loser can simply write a letter contesting the award, and the whole process will have to go to litigation. Gansler suggests removing the "legislative cobwebs," following the procurement methods of the commercial world, and allowing the government buyer to use his best judgement (25:97).

> Congress would have to recognize that there will occasionally be some errors of judgement. But this situation would be far better than trying to regulate millions of annual procurements. These steps would bring enormous improvement to the efficiency and effectiveness of the overall process. Fraud would still be prosecuted. There would be no lack of watchdogs to make sure that the system is functioning properly. It is high time for Congress to stop giving speeches about

"ridiculous" DoD specifications for catsup and fruitcake and turn to changing the laws in ways that would allow DoD to buy commercial items in a commercial fashion. (25:97)

Problem Orientation

Obviously there are many problems with the government procurement process and there are many possible reforms. AFSC was attempting to implement some of these reforms when they decided to move manufacturing under engineering management. The idea that manufacturing needs to be working with engineering during the design phase of the program is sound management, as shown above. However, that moving manufacturing out from under contracting would improve their job satisfaction is a presupposition that needs to be tested. First, a background presenting how the manufacturing and contracting fields began their association will help clarify the development of the field. A more detailed examination of AFSC's plan and decision will also be highlighted. Next, a brief explanation of the engineering and project/program manager career fields will illustrate the similarities and differences between the fields. Finally, the need for and the direction of the research on job attitudes of the manufacturing career field will also be explained here.

Development of the Manufacturing Career Field

As weapon systems became more and more complicated, so did the task of the acquisition commands within the USAF. Early airplane procurement was relatively simple. The planes were not overly complicated, and a competent engineer could manage the procurement program with little technical assistance. As the complexities

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of the programs grew, experts in various fields were brought in to help. Initially, contracting officers were required to do everything necessary to buy the system and deliver it to the user command. After contracts were signed, the contracting officers were required to keep track of the contract deliveries (as some are today). Later, the volume of contracts increased, and the number of delivery problems expanded over time. This required the help of specialists whose entire job was to ensure timely deliveries. These specialists were called expediters, and they worked in and for the Contracting offices (3; 55). Eventually, this specialty field became what is now known as Manufacturing Officers.

During the 1970's, the military was under strong political pressure to cut costs, as mentioned earlier. Restrictive budgets and pressures to reform caused a restructuring of the military acquisition system. Earlier the Defense Department had been content to give a contractor a specification and allow him to do the research and development. The government would not get involved until the contractor was ready to produce the items. That is when government experts would step in and begin managing the program. The problem was that the government was continually fixing or paying for problems that were caused during the development stage. The new plan was to work with the contractor during the development phase to ensure these problems were prevented before they happened. This new emphasis on designing things to avoid problems created a need for government people with technical expertise: engineers. Since many of the problems with cost and missing schedules were associated with the production line, the Manufacturing career field's area of responsibility grew from one

of expediters to industrial engineers. While the job requirements changed, the management structure remained the same; manufacturing was still a part of the contracting office.

Manufacturing-Contracting Relationship

Both contracting and manufacturing officers are managed under the 65XX career field umbrella. This system is used to denote an Air Force officer's specific career field. The code uses a four number system. The first two letters represent a particular field, and the last two letters represent the specialty within that field. The 65XX career field is the Contracting and Manufacturing career field (15:3). Table 1 outlines the breakdown of each of the specialties within 65XX. Table 2 shows how each of these codes are broken out according to the officers' rank and percentage of each specific code within the 65XX career field.

Manufacturing Officers. The tasks manufacturing officers perform require technical knowledge in the areas of industrial engineering or industrial (manufacturing) management. A manufacturing officer's major responsibilities are:

> Manages production and manufacturing quality assurance surveillance activities; develops and implements industrial plans; and monitors contracts for weapons systems, supplies, and services secured through contracting programs. (15:A14-27)

Manufacturing officers usually work in a preventive mode. They are often trying to avoid late deliveries, prevent quality problems, ensure that a program is ready for production, and planning more efficient methods of meeting production requirements. This type of work is often subjective, because no one can be sure what may happen if

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Table 1 - 65XX Specialty Codes

AF SPECIALTY CODE AND TITLE	FUNCTIONAL SPECIALTIES
6524 - Production/Manufacturing Officer	Production/Manufacturing Quality Assurance
6534 - Acquisition Contracting Officer	Operational Support Contracting Central Contracting Systems Contracting Airlift Contracting Contract Administration
6544 - Manufacturing Engineering Officer	Manufacturing Engineering
6516 - Staff Officer	Management and staff functions associated with 6524, 6534, and 6544
6596 - Director	Director of functions encompassed by 6516, 6524, 6534, and 6544

(40:7)

these things are not done. Most managers are compelled to promote those programs with tangible support and visible results when faced with restricted budgets. That type of environment would mean that manufacturing would not command the respect

Table 2 - Specialty Codes, Officer Grades and Authorizations

SPECIALTY CODE	OFFICER RANK*	% OF 65XX FIELD
6524	2Lt thru Capt	8%
6534	2Lt thru Capt	44%
6544	2Lt thru Capt	1%
6516	Maj and Lt Col	39%
6596	Colonel	9%

* There are a few 6524, 6534, and 6544 positions for
Majors. Also, there are a few Lt Colonel 6596 slots.

(40:7)

or consideration their office warrants. In the end, manufacturing officers could begin

feeling insignificant (which leads to dissatisfaction) to the procurement process.

Contracting Officers. Currently the fields of Contracting and Manufacturing are

markedly different. Contracting officers require business and government contract

law background or expertise. The general responsibilities of Contracting officers are:

> Manages contracting activities. Prepares solicitations, negotiates, awards, and
> administers contracts to acquire systems supplies and services through central
> systems, and operational contracting programs (15:A14-29).

Since the contracting officer is the legal voice of the government to the contractor, all

the weapon system program business has to go through the contracting officer's office.

Therefore, a contracting officer has to not only understand his job, but he must also

understand aspects of each of the other jobs within a program office. The work of

contracting officers is easily measurable. They usually deal in finite products:

proposals, negotiations, awards, and contracts. A weapon system cannot be procured without a contracting officer. A weapon system can be acquired without manufacturing support; although, it may or may not have problems.

Career Diversity. The Air Force encourages diversity and depth within all officer career fields during the company grade officer years. Table 2 shows that the majority of the company grade officer 65XX slots belong to the contracting specialty. Furthermore, there is a wider variety of jobs possible within the contracting specialty than within manufacturing (40:8-10). Headquarters Air Force Systems Command (AFSC) and the Military Personnel Center encourage manufacturing officers to cross-train into the contracting officer career field for a short period (i.e., 3 years) to broaden their understanding and experience in the Air Force acquisition environment (40:58). Since there is a shortage of officers with the special skills required in either of the two fields, the personnel officers are not favorable towards letting a 65XX officer broaden into another career field that the officer might not return from. (32)

Restructuring of the Manufacturing Career Field. In January 1990, Headquarters Air Force Systems Command (AFSC) determined that the 6524 and 6534 career fields "were no longer aligned," and the skills required to do both jobs are now distinctly different (2). "The role of manufacturing officers in the Air Force has progressively drifted away from the contracting career field due to the technical nature of the manufacturing discipline" (27:1). Systems Command leaders have concluded that business skills are more appropriate for contracting, while manufacturing tends to be more of an engineering discipline. This emphasis on different skills has led to an

impression that contracting is a field for managers and manufacturing is one for technicians (31).

Perceived Dissatisfaction. Different skill requirements, the lack of career diversity, and the perceived lesser importance of manufacturing may have contributed to feelings of dissatisfaction in the 6524 career field according to Systems Command. These problems make manufacturing officers feel they are second-rate citizens in the acquisition career field (2). HQ AFSC staff officers believe that manufacturing's dissatisfaction had created a rift with the contracting field and plans to realign the manufacturing career field, in some manner, to resolve that rift (28). Possible realignment options were to either combine manufacturing with engineering, with program management, or both. A more unlikely possibility would be to create a unique career field for manufacturing officers. This plan is unlikely because there are only about 200 manufacturing officers in the USAF.

Engineering and Project/Program Manager Career Fields. These two fields form the foundation of the USAF acquisition corps. Their job descriptions and significance to the procurement process will be explored here to help outline the implications of moving manufacturing under either one of them.

Engineers are responsible for the technical aspects of buying weapon systems: i.e. design, developement, test, evaluation, and modification. Specifically engineers are charged with the following duties:

> The Scientific Utilization Field encompasses the scientific research function associated with research and exploratory development in support of Air Force requirements. . . . Each specialty includes responsibilities for conducting or managing programs, projects and activities established to perform research

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pertinent to that specialty. Research includes the functions of defining a problem, selecting methods of approach, performing experiments, accumulating and interpreting data, and publishing the results. Research management includes such functions as formulating, planning, fiscal programming, monitoring, evaluating, coordinating and administering programs, projects, and activities. . . . The Development Engineering Utilization Field encompasses the design, development, installation, modification, service engineering, testing, and analyses of materials, techniques, methods systems, or processes. Each specialty includes responsibilities for management of programs, projects, and activities established to perform development engineering in that specialty. (15:A10-13/14, 37/38)

The importance of designing and developing a good system is readily understood in

this department, therefore, would appear to support manufacturing in their efforts to

stress quality in those areas. The importance of giving a manufacturing orientation to

engineers so that they will design systems that can be easily and efficiently produced

is also an important consideration in choosing this orgainization (23:332).

Project/Program Managers are charged with ensuring that all the various groups

and processes work together to produce the weapon system being procured.

. . . Plans and manages system, subsystem, or equipment acquisition programs which span the entire life cycle of the acquisition process. Performs functions involving engineering, personnel subsystem, data management, configuration management, program control, test, and deployment, or acquisition program integrated logistics support. (15:A10-33)

This field has many similarities to manufacturing in that both are managing schedules.

Some of the programs that the Manufacturing Directorate implements to improve

quality or productivity require the same management techniques used in procuring

weapon systems. Manufacturing officers usually report to a program manager and are

usually responsible for all the manufacturing concerns for that manager.

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Either one of these two organizations could logically manage the manufacturing group. The benefits listed above from such a move are strictly management oriented; the human relations aspect is the focus of this study.

Reorganization of Manufacturing. In the end, HQ AFSC decided to put manufacturing under the management control of the engineering department. The move coincides with the change in philosophy to emphasize the management of the contractor's design process. Since much of the manufacturing job pertains to insuring that the production line will be ready for the newly designed product, this move makes logical management sense (3). The question remains as to whether manufacturing will remain connected with contracting somehow under the personnel system or whether they should be put into the same field as regular engineers. This would mean that an officer would have to have an engineering degree to be a manufacturing officer, because that is what is required in the engineering field by personnel regulation AFR 36-1 (15:A10-17, 41/42). Once again retention levels could be affected adversely from this type of move, and it could be deleterious to the morale of those who remain. The main point here is that AFSC lacks the information necessary to determine whether this decision will help or hurt the career field (31).

Furthermore, AFSC leaders assume that improving satisfaction is important because the Air Force will benefit in some way. These managers hope that they can encourage these officers to stay in the USAF, and that these 65XX jobs will provide officers fulfillment and/or contentment. They think that if their people are satisfied, then there will be a change in some other area, such as in improved performance.

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There is some research support for this idea, as will be discussed in the next chapter. However, there has been no empirical support for this assumption with respect to manufacturing officers.

Specific Problem

AFSC lacks objective the evidence necessary to determine whether or not realigning the manufacturing career field will have a detrimental effect on that field's job attitudes. Since there has been no objective research to determine if 6524 officers are actually dissatisfied, changing the situation may increase or decrease manufacturing officers' job satisfaction. AFSC's current plan could be attacking the wrong area and the problem could remain. Conversely, AFSC's solution could be valid, but extenuating circumstances could mask the effectiveness of the change. In other words, Systems Command has no way of determining whether they are making a good decision or not.

The issue of whether or not high job satisfaction is important to the management of this, or any, career field also needs investigation. Some studies have found that job satisfaction has only a low correlation with improved job performance (39:264-266). Some studies appear to show that job performance causes job satisfaction, not the other way around (64:142-143). There are possible moderating effects to the job satisfaction - job performance relationship that may need to be considered and applied to any decision regarding the effects of one on the others (52:713-714).

Research Thesis

This research will conduct a scientific study of manufacturing officers' job attitudes to determine if they are more dissatisfied than contracting officers, members of other Air Force acquisition career fields, or other Air Force officers in general. Any differences that are detected will be examined for their relative significance. Possible sources for these differences will be investigated. Finally, the implications of the sources of these differences will be explored using behavioral and organizational theory (the job satisfaction - job performance issue will be addressed in Chapter II). This research will follow the pattern developed by Huffine and Doty in their analysis of OAP data on Missile Operations Personnel (18; 37).

Investigative Questions

Survey data will be used to answer the following questions:

1. Are there any significant differences between the 6524, 6534, other acquisition career fields, or other Air Force officers?

2. Which of the personnel attitude factors exhibits a significant difference? What could be possible causes for these differences?

3. How can current research on this subject be applied to resolve these differences in job attitudes between manufacturing and contracting?

A data base that surveyed job attitudes of manufacturing, contracting, acquisition and other Air Force officers needed to be selected to address the research question. The Organizational Assessment Package (OAP) was selected due to its extensive sample size and wide coverage of AF career fields (see Chapter III). The OAP has data that will allow comparison of 25 factors affecting job attitudes. Mean scores can be

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determined for each career field surveyed in the OAP, by each factor. There are data on 30 officers in the 6524 field, and 154 officers in the 6534 field in the version of the OAP used in this study.

Limitations

The major limitation is that the data in the OAP are dated. The data were collected between 1981 and 1985 (37:13). The attitudes and environment may have changed over the years; therefore, the conclusions may not be valid for the current situation. However, these data were acquired before AFSC made any changes in the organizational structure of the 65XX career field, therefore, it is not contaminated by the effects of those changes.

Another limitation is that there may be a large degree of heterogeneity between the groups being compared. Since there are more job possibilities within contracting, the different job environments may affect the attitudes recorded. In other words, the differences may not be simply a result of the job. This potential bias is moderated somewhat by the fact that all the respondents are Air Force officers who share a similar overall working environment (e.g., pay, benefits, status, medical, and leave).

Finally, the sample size of the Manufacturing officers is fairly small. Statistically, the conclusions could be interpreted as being limited. This will be discussed in more detail in Chapter III.

Assumptions

Even though the information is dated, this research will be able to point to a time when any differences found were as a result of job characteristics, rather than rumors of manipulation of the career field by Systems Command. That evidence can be used as a baseline for future studies. Secondly, the study assumes that the OAP can identify the differences AFSC perceives. Next, it is assumed that the relatively small sample size of Manufacturing officers is representative of the career field in general. Finally, if a significant difference is determined, then it is assumed that this difference reflects the job satisfaction of manufacturing officers.

Summary

The U.S. government desires to have a continually developing defense industrial base, in order that America can defend itself and remain competitive in the world, both now and in the future. This desire has been translated into a continuous relationship of government support with these industries. The abusers of this system attracted so much attention that Congressional and regulatory controls were instituted to minimize the opportunity for these types of infractions from occurring in the future. These regulations have had a deleterious affect on the morale of the people who work within the defense procurement system. Several recommendations have been suggested to help improve the situation for the people within this "regulated industry." These suggestions include improving the training for acquisition personnel, removing legislation and providing a streamlined process with a decentralized management approach. In an effort to improve the situation of the acquisition personnel HQ AFSC

has reorganized the manufacturing organization under the engineering department's control. AFSC hopes that this move will improve the quality of the procurement program as well as the job attitudes of manufacturing officers. The implications that motivational theory has on this type of move will be discussed in Chapter II.

II. Theory Review

Background

The Air Force, particularly within Air Force Systems Command, is promoting a new system of management called Total Quality Management (TQM). One main component of TQM is the concept of "Continuous Improvement:" the idea that "nothing is good enough," everything can be improved (21). The managers of AFSC's personnel offices, applying this concept, anticipate that their reorganization will improve job satisfaction within the manufacturing career field. These managers hope that improving satisfaction will provide a positive return on their effort. This chapter will investigate the reasonableness of AFSC's assumptions through an analysis of research in this area, including the affects of job satisfaction on performance and other variables. First, however, this section will survey the theories which help explain the motivations of the OAP respondents. The influence of the manager/leader, the environment, and the individuals themselves on motivation will be noted. Finally, the importance of these three variables in the theory which led to the development of the OAP is studied.

Major Theories

Hierarchy of Needs. Abraham Maslow published his theory of the Hierarchy of Needs to explain motivation in 1954. Maslow determined that men are motivated to do things because of basic needs that were arranged in a hierarchical order. The five main needs listed in order are: physiological, safety, belongingness and love, esteem,

and self-actualization. An individual must at least partially satisfy a lower need before he could satisfy the next higher need (46:80-106). The implication here is that dissatisfaction within the manufacturing career field could be the result of needs that are not being met. Since the Air Force arguably provides much of the lower needs, then needs such as belongingness, self-esteem, and self-actualization could be the ones that are troubling manufacturing officers. The Maslow solution would be to provide whatever need is lacking so the person can be satisfied.

One problem with Maslow's theory is that it concentrates only on the individual. The effects of the situation or environment and the job or management are not sufficiently addressed by Maslow's theory (60:639).

Two Factor Theory. Frederick Herzberg (1959) pared man's motivation down from a five- to a two-factor theory: motivators versus hygiene factors. He proposed that hygiene factors, which are extrinsic characteristics of the job, cause dissatisfaction only by their degree of presence or absence: as in a hazardous job or in low pay. Man will only desire to reach a level where he has "no job dissatisfaction," consequently, hygiene factors will not effectively motivate him beyond that level (35:58). He is saying that giving someone more hygiene factors, when they are already at a comfortable level, will not motivate them to higher levels of job performance. Herzberg believes that hygiene factors can be viewed as needs stemming from man's animal nature, while motivators are those psychological growth needs common to the human facet of man. Motivators are "job content" stimuli, while hygiene concerns are "job environment" factors (35:58). Herzberg found that the

presence of motivators would generally contribute to satisfaction, while their absence did not contribute to dissatisfaction. Responsibility, personal achievement, recognition, advancement, learning and growth are man's intrinsic characteristics that Herzberg called motivator factors.

The classic mistake of management is to focus on the hygiene factors that are causing dissatisfaction. Herzberg espoused that removing hygiene factors alone would not appreciatively motivate individuals, only motivators enrich jobs and stimulate individuals to higher goals. Increasing the amount of work required, rotating similarly monotonous jobs, and removing difficult parts of a job are all hygiene solutions that do not promote man's higher psychological growth needs. Job enrichment is Herzberg's method of motivating. Improvements in job satisfaction come from providing workers with authority, accountability, and increased responsibility (34:130-131). "Our point is that the jobs themselves have to be set up in such a way that . . . the individual who carries them out can find that their operations lead to increased motivation" (34:134)

Herzberg's theory has been the object of numerous criticisms. The most frequent criticism is in the method Herzberg used to obtain survey results. Hulin and Smith found no support for his theory's predictions when different methods of verification were used: in other words the theory is method-bound (38:401). Herzberg simply asked his respondents to:

> Think of a time when you felt exceptionally good or exceptionally bad about your job, either your present job or any other job you have had. This can be either the "long-range" or the "short-range" kind of situation, as I have just described it. Tell me what happened. (34:141)

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Critics, such as Vroom, said that this allowed the people to answer subjectively, and therefore, they may subconsciously hide the real fault of their dissatisfaction: as in personal error (63:129). However, Bobbit and Behling found that the respondents were not biased by a defensive reaction to questioning or that they "attribute[d] satisfaction to their own actions and dissatisfaction to those of others in order to appear in a favorable light to significant others" (8:26).

Although some of Herzberg's conclusions have been criticized from an academic point of view (6:380), the essence of his theory is appropriate for this research. Since the Air Force can arguably be described as an employer that meets the hygiene needs of its employees, the only way to improve satisfaction, using this theory, would be to focus on motivator factors. Moving the manufacturing career field into a new organization (i.e. Engineering) could be categorized in two different ways. This move might be considered an administrative change since a large percentage of manufacturing officers work in a matrixed organization; therefore, changes in the parent orgainization would not be as visible to them on a daily basis. Herzberg classifies company policy and administration as a hygiene factor; consequently, it may not provide an appreciable change to the issue of job satisfaction. If the move were considered an improvement to the work itself, provided more recognition, responsibility, and advancement, then it could be considered a motivator and would improve satisfaction (34:59-83).

Lower satisfaction could also be caused by the absence of certain motivators in the manufacturing career field. If these same motivators are present in the other

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acquisition career fields, they might be able to improve manufacturing's satisfaction by association with the new orgainzation, according to Herzberg's theory. One final aspect of the Two-Factor theory is that it provides insights into how motivation is affected by both the environment and the individual.

Equity Theory. Maslow and Herzberg defined the things that caused motivation (content theory), rather than the process that brings actions about. Equity theory is a process theory in which people will compare their situations with the situations of others. The theory is explained through the use of outcomes (i.e., returns or rewards) and inputs (i.e., effort, education, or talent) (5:299). A state of equity exists where "the ratio of a person's outcomes (O) to inputs (I) is equal to the ratio of other's outcomes to inputs.

$$\frac{O_p}{I_p} = \frac{O_o}{I_o} \tag{1}$$

A state of inequity exists where these two ratios are unequal" (11:100). If a person is not receiving the same perceived benefits as another, he will feel inequity which leads to dissatisfaction (11:99). The person feeling the inequity can change (either increase or decrease) their outcomes or inputs to equal the other's ratio.

This theory has real potential in this case study of manufacturing and contracting career fields. Manufacturing officers could perceive an inequity in the ratio of outcomes to inputs for them as compared to contracting officers or any other acquisition career field. That type of situation would result in a certain level of frustration and dissatisfaction. The 6524's may decrease their inputs in order that their ratio matches that of other officers. Conversely, managers may view manufacturing as

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an insignificant career field (giving it a smaller outcome). Smaller outcomes in manufacturing would result in these officers determining that their inputs must be much less significant (in order to maintain their equity ratio to other's) than they had previously thought. Of course, these perceptions of inequity and the resultant devaluing of inputs causes dissatisfaction. The latter scenario reveals that managers can create inequities by either limiting input or devaluing outcomes. That means that this theory considers the needs of the individual, their environment, and the issue of what impact the manager's decisions have on employee satisfaction.

Job Characteristics Model

Since various aspects of a job lead to satisfaction and dissatisfaction, it follows that jobs can be changed in one fashion or another to improve their motivation potential. Hackman and Oldham developed a model (see Figure 1) that would help in redesigning jobs to improve an employee's job satisfaction. The model starts with five core job dimensions: skill variety, task identity, task significance, autonomy and feedback. These five dimensions gauge the critical psychological states of the employees that are being evaluated (30:257-258). The states that are measured by the core job characteristics are:

Experienced meaningfulness of the work. The degree to which the employee experiences the job as one which is generally meaningful, valuable, and worthwhile.

Experienced responsibility for work outcomes. The degree to which the employee feels personally accountable and responsible for the results of the work he or she does.

CORE JOB DIMENSIONS → CRITICAL PSYCHOLOGICAL STATES → PERSONAL AND WORK OUTCOMES

Skill Variety
Task Identity
Task Significance
→ Experienced Meaningfulness of the Work

Autonomy → Experienced Responsibility for Outcomes of the Work

Feedback → Knowledge of the Actual Results of the Work Activities

EMPLOYEE GROWTH NEED STRENGTH

High Internal Work Motivation

High Quality Work Performance

High Satisfaction With the Work

Low Absenteeism and Turnover

MPS = (Skill Variety + Task Identity + Task Significance)/3 * Autonomy * Feedback

FIGURE 1. THE JOB CHARACTERISTICS MODEL (30:256)

Knowledge of results. The degree to which the employee knows and understands, on a continuous basis, how effectively he or she is performing the job. (30:256-257)

When the valences of the factors above are multiplied together, one can measure the personal and work outcomes of the employees under study. If the valences are high, the outcome will be high internal motivation, high work satisfaction, high quality performance, and low absenteeism and turnover. The valences can be computed using a formula that measures the motivating potential of a job. This formula, as shown in Figure 1, is called the Motivating Potential Score (MPS) (30:258).

This theory is particularly useful because it recognizes that an employee's motivation is moderated by the strength of his desire to grow:

A job high in motivating potential will not affect all individuals in the same way. In particular, people who strongly value and desire personal feelings of accomplishment and growth should respond very positively to a job which is high on the core dimensions; individuals who do not value personal growth and accomplishment may find such a job anxiety arousing and may be uncomfortably "stretched" by it. (29:160)

The moderating factor is appropriately termed "employee growth need strength" as seen in Figure 1 (29:160-163).

The Job Characteristics model will help identify the need for job enrichment in the three career groups being evaluated in this study because the five core job dimensions are also measured in the OAP.

The Satisfaction Affects Performance Issue

Many motivation theories rest on the premise that the happier an individual is, the more productive that individual will become. Vroom stated:

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It was typically assumed by most people connected with the human relations movement that job satisfaction was positively associated with job performance. In fact human relations might be described as an attempt to increase productivity by satisfying the needs of employees. (63:181)

This assumption has considerable intuitive appeal among many theorists and practitioners (39:251). There have been many studies that have argued for and against this presumption that job satisfaction leads to increased performance (52:712-713). It is important that we understand the limits of the correlation between these two variables, so that we can determine their relationship in this study's specific case of manufacturing officers.

When Iaffaldano and Muchinsky (1985) used a meta-analysis (analyzed many analyses on same subject) to study job satisfaction and job performance, they only found a .17 correlation between the two variables (39:264-266). Petty, et al (1984) also used a meta-analysis to determine that the relationship between job satisfaction and performance was:

an average of .31 for professional/supervisory/managerial groups and an average of .15 for the non-professional/non-supervisory/non-managerial group. Correcting for attenuation raises the averages to .41 and .20. (52:715)

They determined that the correlation between satisfaction and performance was stronger and more consistent that what had been reported earlier and, more importantly, that job level moderated this correlation (52:719).

The difference in the two meta-analysis seems to be related to job levels. Iaffaldano and Muchinsky's study covered both white and blue collar workers (39:264), while Petty, et al's analysis separated white and blue collar results (52:715). These results (.41 vs. .20) appear to support the assumption that as job levels increase,

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so does the correlation between job satisfaction and job performance. This is an important distinction for this thesis because the subjects under review are all white collar employees. Therefore, it should be safe to assume that there will be a positive relationship between job satisfaction and job performance. In other words, AF managers should be able to motivate 6524's or 6534's to increase performance, by increasing their job satisfaction because these officers are basically white collar employees.

Slocum investigated the satisfaction and performance relationship when it is moderated by Maslow's differing need levels (59). "A significantly higher correlation was found for self actualization needs than for either security or esteem needs, similar to the findings of an earlier study by Lawler and Porter (1967)" (64:140; 43). Slocum also determined that the satisfaction - performance correlation was higher for top managers than lower managerial personnel (59:314-315). The implication for this study is that there should be a higher correlation between satisfaction and performance because, as stated above, most Air Force officers will have their lower level needs already met. However, the Slocum results also showed a lower correlation for lower level managers. Since 6524's and 6534's are lower level managers, these results would hint that their satisfaction - performance correlations may not be as high as 6516's or 6596: this career field's higher level managers.

Herzberg's theory implied that job satisfaction is a result of job performance. He said:

> . . . what do people want from their jobs? They most frequently described factors related to their tasks, to events that indicated to them that they were

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successful in the performance of their work and to the possibility of professional growth. (34:113)

This reversal of satisfaction - causes - performance theory, to one of performance causing satisfaction was supported by Lawler and Porter's findings that performance leads to rewards and rewards lead to satisfaction (43:20-28).

Since Herzberg's theory had delineated between intrinsic and extrinsic factors, other researchers looked at these areas as moderators to determine the true satisfaction-performance relationship. Extrinsic factors are those such as pay, working conditions, and job security, or hygiene factors. Intrinsic factors are those associated with Herzberg's motivators, such as achievement.

> Many other potential moderators have been tested, including variables such as occupational group (Doll & Gunderson, 1969); degree of job fit (Carlson, 1969); supervisory level (Slocum, 1971); pressure for production and task difficulty (Ewen, 1973); self-esteem (Jacobs & Solomon, 1977); and need for achievement (Steers, 1975). Of the many moderator variables proposed, however, rewards (i.e., perceived equity or reward contingency) probably have received the most attention. (52:714)

Finally, Sutermeister proposed a cyclical model of satisfaction and performance: they cause each other (61). Petty, et al suggested the same model for their results. They suggested that the performance-causing-satisfaction was the first link in the chain. This type of relationship would help explain the low correlations between the two variables (52:719). The implication for this study is that the USAF may have to expand the opportunities for officers to receive extrinsic rewards and intrinsic satisfaction in order to increase job performance and job satisfaction.

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Contingency Approach

Since people are complex and unpredictable individuals, one theory of motivation may only apply to them at any one point in time. A manager has to evaluate each situation and judge which theory to apply, based on what he determines will motivate an individual (41:29). That philosophy is what drove the development of the Organizational Assessment Package. The developers of the OAP surveyed the literature on leadership/management and motivation to create a Three Component Leadership Effectiveness Model. Effectiveness is defined as a function of the criterion selected, the leadership style, and the situational environment (including subordinates) (33:30).

Hendrix (33) determined that leadership effectiveness is affected by whatever criterion is used in the evaluation. For example, a democratic leader may be highly effective in making the office a pleasant place to work if that is the criterion for effectiveness. However, he may be very ineffective when productivity is the criterion. A manager must determine what scale he is being measured against in any given situation, to be optimally effective.

Leadership style also influences leadership effectiveness. Hendrix (33) identified five behaviors that can be applied across various situational environments to achieve desired results: group processing, self-enhancing, dynamic interacting, structural achieving, and compromising. Employing a dictatorial style of leadership in a brain-storming session may not be the most effective style.

An effective leader will also evaluate the "situational profile" before acting (33:31-32). Since the situational environment obviously includes the personnel working for the leader, he needs to be able to understand their motivations to be effective. An effective leader will assess the situation, determine what criterion he is attempting to comply with, and apply a style that will motivate his people to accomplish those ends. Figure 2 describes the interaction of these three variables and how they all affect each other.

The Organizational Assessment Package was developed to objectively measure these three areas and help put the Three-Component Leadership Effectiveness Model to work.

> Hendrix chose indicators of job satisfaction, organizational climate, and perceived productivity to measure his first component-criterion selected to measure success. Hendrix's second component, leadership/management style, was measured by indicators dealing with management/supervision and supervision/communications climate. The third component, the situational environment, was measured by two sections of the survey: the background information section; and the job inventory, which contained items regarding the job itself. (56:3)

These indicators can also be used for analyzing the motivational states of each of the theories above: Hierarchy of Needs, Two Factor Theory, and the Equity Theory. Criterion selected, leadership/management style, and situational environment assess the individuals needs, motivators and perceptions of inequity. The survey also explores the areas of job enrichment, intrinsic and extrinsic factors. These latter variables will help predict what solutions can be offered to resolve any dissatisfactions highlighted by the survey. Therefore, not only will this survey describe the problems in an

Legend:

E = Effectiveness

c = Criterion

l = Leadership Style

s = Situational Environment
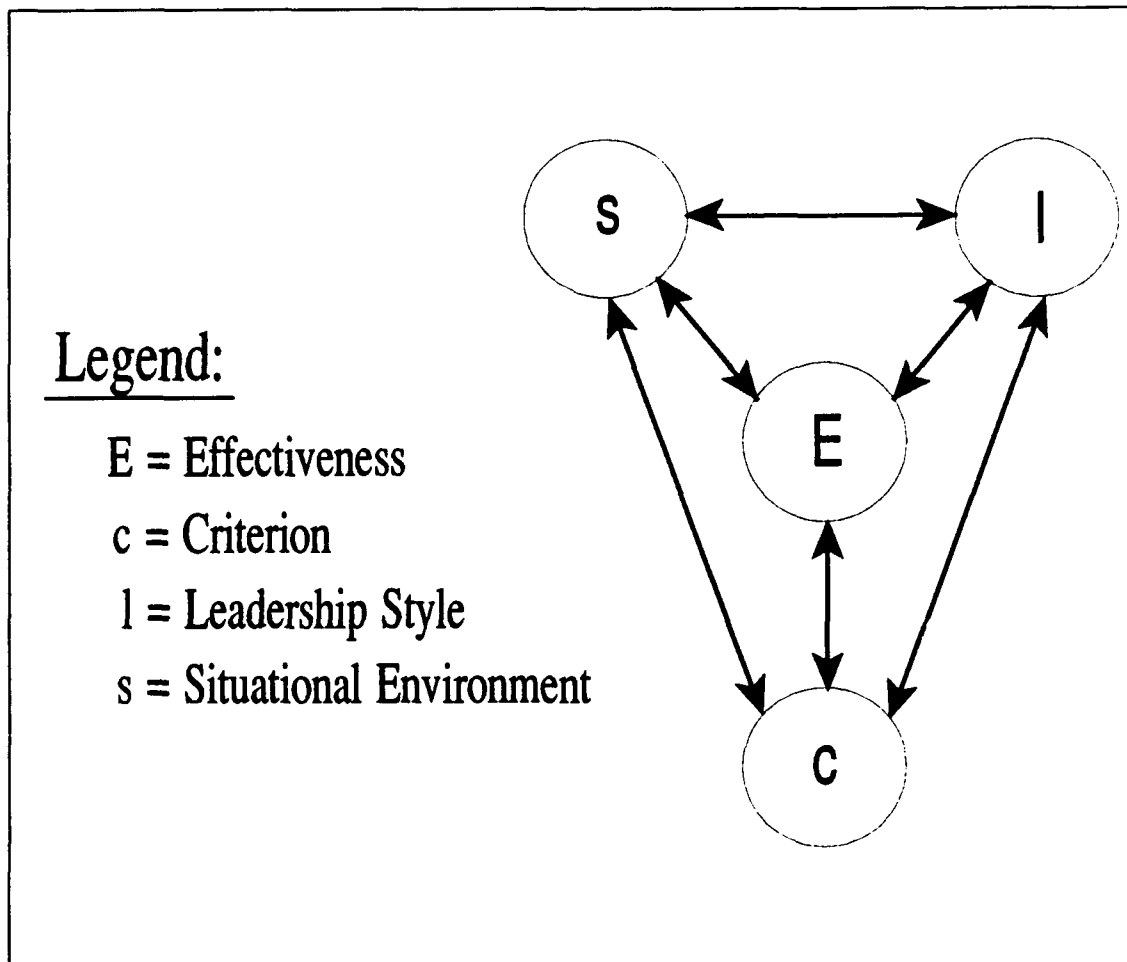
Figure 2 - Three Component Leadership Effectiveness Model. (33:32)

organization, it can also provide information that can furnish evidence of what is causing the problem.

<u>Summary</u>

This chapter began with the reason AFSC wanted to improve satisfaction among their personnel. Then the basic research surrounding motivation and job satisfaction was detailed, and their applications were discussed. The research on the correlations

of job satisfaction to job performance was highlighted. Finally, the approach that the creators of the OAP used to combine these theories was presented. The next chapter will explain how the OAP will be applied to solving the research question.

III. Research Method

Research Objectives

Headquarters AFSC believes that there is a problem with job satisfaction in the manufacturing career field, but lacks objective evidence to support that view (2). This research will answer the question "are manufacturing officers dissatisfied with their career field?" If dissatisfaction is discovered within the 6524 field, this research will ascertain whether the dissatisfaction is significant. The findings will help outline possible causes of different satisfaction levels. And finally, the motivational theories discussed earlier will be used to determine solutions to these problem issues.

Research Tools

The Organizational Assessment Package (OAP) was selected for evaluation because it contains responses to job attitude questions from 30 officers in the 6524 field, 154 officers in 6534, as well as a large sample of officers from nearly every field in the Air Force (44). The OAP questioned over 100,000 civilians, officers, and enlisted personnel at over 100 Air Force installations (37:iii). The OAP also reflected the views of these officers before any of the recent talks of reorganization could influence their responses.

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Organization Assessment Package

Development and Utility. The OAP was developed as a tool to help supervisors in the Air Force do everything possible to improve Air Force life for their personnel. The Leadership and Management Development Center (LMDC), at Maxwell Air Force Base, Alabama, created the OAP to be used by supervisors to identify organizational strengths and weaknesses (56:1-3). The OAP also established "a data base in support of Air Force-wide organizational effectiveness research efforts" (45:5). "The OAP is a result of several revisions designed to create a survey instrument of minimal length which reliably measures organizational effectiveness" (18:34).

Design. The OAP is a 109 item survey, that measures 25 factors and outlines 16 demographic areas. The 25 factors are developed from combining 93 of the questions in various mathematical formulas that will help measure the factor of interest. These 25 factors are categorized further into a systems model with four aspects: work itself, job enrichment, work group process, and work group output (49:1). Table 3 describes the relationship of the 25 factors to the 4 functions, it defines what these functions measure, and it displays the factor's reliability.

Reliability. "A measure is reliable to the degree that it supplies consistent results" (19:98). A factor by factor study was conducted by Short and Hamilton (1981) to determine the internal reliability of the OAP. They concluded that "the OAP generally shows acceptable to excellent reliability" (57:28). The reliability for each factor is shown in parentheses ( ) in Table 3 in the next section. Short and Hamilton used Cronbach's Alpha to test the internal consistency reliability of the

Table 3 - OAP Functions, Factors, Reliabilities, and Descriptors

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<u>Functions</u>   <u>Factors</u>

The   - Task Characteristics (.84)   - Work Repetition (.70) [1]
Work   - Task Autonomy (.85)   - Job Related Training (.73)
Itself*   - Job Performance Goals (.72)
                                   - Desired Repetitive/Easy Task (.70)

* Relates the task properties (technologies) and environmental conditions of the job. It assesses the patterns of characteristics members bring to the organization, and patterns of differentiation and integration among position and roles.

Job   - Skill Variety (.81)   - Need for Enrichment (.90)
Enrichment**   - Task Identity (.58)   - Job Feedback (.66)
                                   - Task Significance (.79)

** Measures the degree to which the job is interesting and meaningful, challenging and responsible.

Work   - Work Support (.41)
Group   - Supervisory Communications Climate (.95)
Process+   - Organizational Communications Climate (.92)
                     - Management Supervision (.94)

+ Assesses the pattern of activity and interaction among the group members.

Work   - Pride (.90)   - Job Related Satisfaction (.84)
Group   - Advancement/Recognition (.78)   - Perceived Productivity (.87)
Output++   - General Organizational Climate (.92)

++ Measures task performance, group development, and effects on group members. Assesses the quantity an quality of task performance and alteration of the group's relation to the environment norms. Assesses changes on skills and attitudes, and effects on adjustment.

[1] Numbers in parentheses are Cronbach's Alpha reliabilities for OAP factors.

(37:59; 49:106-107; 57:16-17)

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OAP. Since Cronbach's Alpha is "considered the lower bound of internal consistency reliability . . . alpha may generally be considered a conservative estimate of the true reliability of a scale or factor" (57:4). Even the factors with low internal consistency can attribute this weakness to only having a few items to measure against. Nevertheless, each factor should be evaluated separately for accurate reliability (57:28).

Validity. The OAP was examined for construct validity by Short and Wilkerson who found the data seemed strong and consistent (58:1). Construct validity inductively measures whether the items we are using are representative of what we are attempting to measure (19:97). Their study showed no differences among functional areas for every factor.

Data Administration. The data were collected in two sets of visits, at over 100 bases, by LMDC personnel: an initial visit and a six month follow up one. The tests were given to all personnel present at that time. The resulting data were originally stored at LMDC, but were moved to Air Force Human Resources Laboratory at Books AFB, Texas when the LMDC was disbanded (18:37-38).

Data Analysis

Sample Description. The responses of thirty (30) manufacturing, 154 contracting, 2130 acquisition, and 19,399 other USAF officers will be compared against each other for each of the 25 factors. The manufacturing officers come from all the officers surveyed in the data base with a Duty Air Force Specialty code of either 6524 or 6521 (entry level officers). Although the number surveyed seems relatively small, it

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represents 9.55% of all the manufacturing/contracting respondents to the OAP. The USAF-wide average for this ratio is 8% (as shown earlier in Table 2). Therefore, it could be argued that the significance of this study would be strengthened, because the results are representative of the views of a greater ratio of 6524's than the Air Force average.

The contracting officers are all 6534's or 6531's. The manager/supervisor level of the two 65XX fields could not be included because their was no way to determine whether a 6516 or a 6596 managed either a Contracting or a Manufacturing Office (as shown in Table 1).

The acquisition officers are made up of all 26XX, 27XX, and 28XX respondents on the OAP. Most of the officers in these career fields will be working in Systems Command in similar acquisition programs as the manufacturing and contracting officers. Other career fields, such as Cost Analysts, were not included in this "acquisition" group because it was not possible to determine whether these Cost Analysts were working in a similar System Program Office environment, or whether they were working in an operational environment.

The final group of officers surveyed are all those not included in the three groups above. The demographics of each of these four groups is discussed in Chapter IV.

Research Tests and Objectives. The means of the 25 factors listed above will be compared based on F-tests to determine if there is any significant difference between the manufacturing career field and any of the other three career groups. Since a t-test can only compare two samples, a F-test will be used because it can "compare more

than two treatment means" (47:860). The data will be analyzed on a VAX 11/785

computer using the statistical software package Statistical Analysis System (SAS).

The F-tests will use a 95% confidence level. The factors that show a significant

difference will be noted and evaluated based on the theory discussed in Chapter II.

Test Assumptions. Statistical practice requires that the groups being tested be

independent when using a F-test. This means that the responses of either group do not

influence the other. Usually, the variances of both groups have to be approximately

equal for the normal F-test to work. However, we will be using Tukey's honestly

significant difference (HSD) method to test and compensate for different variances and

sample sizes. Tukey's method appears to be the best method to use in this situation

since the sample sizes vary so radically and because we are comparing four groups at

the same time (65:198-216). The final test assumption is that the size of the sample is

large enough to approximate a normal distribution required in F-tests (47:860). This

assumption is an application of the Central Limit Theorem, which states:

> If a random sample of n observations is selected from a population (any
> population), then, when n is sufficiently large, the sampling distribution of x will
> be approximately a normal distribution. The larger the sample size, n, the better
> will be the normal approximation to the sampling distribution of x. (47:319)

Summary

This chapter reported the method of research used to answer the questions of this

thesis. First, the purpose and the direction of the research were reported. The reason

the OAP was selected, why it was developed, what it is, and what it can do were all

featured here. Finally, the data and how it will be tested was defined.

IV. Results

Introduction

Although the survey contains data from 21,712 respondents, it will be noted that the results reported in this chapter do not always equal this number. There are two reasons for this anomaly. First, some of the respondents did not answer every question and/or gave improper answers to the questions asked. An example of the latter error is when a person answers a question that has an answer range from 1 to 7, with a 9. "Second, the task of compiling the huge amount of data into a workable data base for computer analysis apparently resulted in some cases of data loss" (18:44).

Demographics of Each Group

This section will present information on sample sizes, gender, ages, grades, education levels, ethnic groups and career intent of the subjects that responded to the OAP survey. This type of informa\.on is important in determining whether factors other than the job environment are moderating satisfaction level results. Also, the term "procurement officer(s)" will be used throughout the next two chapters to represent manufacturing, contracting, engineering officers and program/project managers as a collective group. The term "acquisition officers" refers to the third group that was evaluated in the study consisting of engineering and program/project managers.

Sample Size. Table 4 shows the sample sizes of the four different groups being compared in this study. The sample sizes varied somewhat for each of the factors, but none of the variations were enough to degrade the significance of the data. The implications of the manufacturing group only having 30 officers has been mentioned earlier and will be readdressed in each applicable demographic analysis.

Table 4 - Number of Officer Respondents by Career Fields

	Manufacturing	Contracting	Acquisition	Al Ohers
n =	30	154	2130	19,399

Sample Age. Table 5 shows differing age concentrations for each of the three specific career fields. The majority for all three fields seems to be in the range from 20 to 35 years of age; this is intuitively obvious because the career fields are staffed mostly with Lieutenants and Captains. However, the acquisition field has more 20 to 25 year old's, contracting has more 25 to 30 year old's, and manufacturing has their majority in the 30 to 35 year old group.

Grade. As mentioned above, the grades of the respondents (see Table 6) in the first two career fields are heavily represented by Company Grade officers: Lieutenants and Captains. This is because the two fields do not include their supervisors, which are manned by majors and above. The only other noticeable difference is in the preponderance of 2nd Lieutenants in the acquisition career field compared to the rest

Table 5 - Age of Officer Respondents by Career Field

Age	Manufacturing n (%)	Contracting n (%)	Acquisition n (%)	All Others n (%)
20-25 Yrs	8 (26.7%)	29 (18.8%)	629 (29.5%)	2138 (11.0%)
26-30 Yrs	6 (20.0%)	65 (42.2%)	419 (19.7%)	5400 (27.8%)
31-35 Yrs	11 (36.7%)	42 (27.3%)	326 (15.3%)	4731 (24.4%)
36-40 Yrs	5 (16.7%)	16 (10.4%)	423 (19.9%)	3903 (20.1%)
41-45 Yrs	0 (0.0%)	1 (0.6%)	253 (11.9%)	2124 (10.9%)
46-50 Yrs	0 (0.0%)	0 (0.0%)	64 (3.0%)	687 (3.5%)
> 50 Yrs	0 (0.0%)	1 (0.6%)	16 (0.8%)	412 (2.1%)

of the USAF. This finding agrees with McMahon's findings of stratification in the acquisition career field (48:32).

Table 6 - Grade of Officer Respondents by Career Field

Grade	Manufacturing n (%)	Contracting n (%)	Acquisition n (%)	All Others n (%)
2nd Lt	8 (26.7%)	25 (16.2%)	491 (23.1%)	1779 (9.2%)
1st Lt	4 (13.3%)	37 (24.0%)	401 (18.8%)	3084 (15.9%)
Capt	16 (53.3)	88 (57.1%)	516 (24.2%)	7825 (40.3%)
Major	2 (6.7)	3 (1.9%)	379 (17.8%)	3478 (17.9%)
Lt Col	0 (0.0%)	0 (0.0%)	248 (11.6%)	2139 (11.0%)
Colonel	0 (0.0%)	0 (0.0%)	74 (3.5%)	790 (4.1%)
General	0 (0.0%)	0 (0.0%)	1 (0.0%)	43 (0.2%)

Education Level. Table 7 shows the importance of advanced degrees in the Air Force. Each career field seems to be fairly consistent with the others. Once again, the lack of any manufacturing PHD's could be attributable to the fact that this group is not representative of Major's or above; that is the rank where most officers get their PHD's.

Table 7 - Education Level of Officer Respondents
by Career Field

Grade	Manufacturing n (%)	Contracting n (%)	Acquisition n (%)	All Others n (%)
Non H.S. Grad	0 (0.0%)	0 (0.0%)	1 (0.0%)	3 (0.0%)
H.S. Grad or GED	0 (0.0%)	0 (0.0%)	0 (0.0%)	56 (0.3%)
< 2 Yrs College	0 (0.0%)	0 (0.0%)	1 (0.0%)	69 (0.4%)
>= 2 Yrs College	0 (0.0%)	1 (0.6%)	0 (0.0%)	298 (1.5%)
Bachelors	13 (43.3%)	80 (51.9%)	1053 (49.4%)	10216 (52.7%)
Masters	17 (56.7%)	69 (44.8%)	997 (46.8%)	6916 (35.7%)
PHD	0 (0.0%)	3 (1.9%)	77 (3.6%)	1795 (9.3%)

Career Intent. Each of the four groups seem to agree on their intentions of making the Air Force a career (Table 8). The relatively low numbers for retirement for manufacturing and contracting is probably attributable to the grade of the group sampled. Since these two groups were nearly all company grade officers, only those officers with prior enlistment would have the time in the USAF necessary to retire. The lack of any respondents choosing to terminate as soon as possible or are not likely to make the Air Force a career is not statistically conclusive since one person either

way would level the results. However, those two areas could be indicative of a person's satisfaction level with a job. Manufacturing's responses to intending to make the Air Force a career and not likely making it a career seem to rank it on opposite ends of the sampled spectrum with the acquisition career field. Once again this could be indicative of a satisfaction level of the subjects with their respective jobs, or, that they tend to be older captains (probably with more service).

Table 8 - Career Intent of Officer Respondents
by Career Field

Career Intent	Manufacturing n (%)	Contracting n (%)	Acquisition n (%)	All Others n (%)
Plan to Retire w/in 12 Months	0 (0.0%)	1 (0.6%)	103 (4.8%)	640 (3.3%)
Career	20 (66.7%)	76 (49.4%)	963 (45.2%)	9847 (50.8%)
Likely Career	5 (16.7%)	46 (29.9%)	458 (21.5%)	4247 (21.9%)
Maybe Career	5 (16.7%)	20 (13.0%)	397 (18.6%)	2870 (14.8%)
Not Likely Career	0 (0.0%)	9 (5.8%)	141 (6.6%)	1067 (5.5%)
Will Terminate/ Separate ASAP	0 (0.0%)	0 (0.0%)	59 (2.8%)	623 (3.2%)

Demographic Summary. The low number of manufacturing officers surveyed seems to be the aspect of the samples which is most limiting to this study. This sample size limits the number of conclusions that can be attributed to demographic factors. However, a few conclusions are relevant. One, the manufacturing and contracting samples are made up of fairly young company grade officers. Number

two, Women seem to prefer the contracting career field over other acquisition career fields. Three, the education level for all groups appears to reflect a highly educated sample group. These all argue for the representativeness of the sample. Finally, the manufacturing and acquisition fields seem to have differing views on making the Air Force a career. Future research may determine whether or not these distinctions account for any significant differences in job attitudes, but this issue is beyond the scope of the present study.

Analysis of OAP Variables

The OAP's survey questions were combined in a set pattern to form specific variables, or factors, of interest to the OAP's developers. Most of the questions were simply added together to form a factor for analysis, but some had more complicated formulas. The formulas for each of the factors can be found in Appendix B. Twenty five factors were analyzed, and their results will be presented shortly. The factors were then combined into four groups by the OAP developers. These groups are Work Itself, Job Enrichment, Work Group Process, and Work Group Output. The next four sections will discuss the results of this analysis for each of these four groups.

Work Itself. All of the factors in this group, except for "Job Desires," had a significant difference between at least one pair of means at the 95% confidence level (see Table 9). However, only three of the seven factors had significant differences between the manufacturing career field and some other career field: Task Characteristics, Work Repetition, and Job Related Training. The other differences can be seen in Appendix C: Table 13.

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Table 9 - ANOVA of OAP Work Itself Factors
by the Four Career Fields

Factors	F	Prob > F
Job Desires	1.66	0.1723
Job Performance Goals	177.21	0.0001
Task Characteristics	153.17	0.0001
Task Autonomy	6.78	0.0001
Work Repetition	244.22	0.0001
Desired Repetitive Easy Tasks	28.94	0.0001
Job Related Training	117.98	0.0001

Task Characteristics. This factor exhibited a significant difference between manufacturing and the rest of the Air Force group. The Task Characteristics factor is "a combination of skill variety, task identity, task significance, and job feedback designed to measure several aspects of one's job" (49:2). For this factor, a low mean score signifies fewer desirable characteristics in a job. Manufacturing had the lowest mean out of all four groups, and its standard deviation was relatively low. Even though the acquisition group had the third lowest mean and a higher standard deviation, it was significantly different from the contracting group while manufacturing was not. This occurrence most probably was a result of the small

sample size of the manufacturing group combined with the statistically conservative nature of Tukey's (HSD) method. It should be noted that in all probability, many of the differences which because of the limitations on the present sample do not reach significance, are real for manufacturing officers. This phenomenon occurs often in this analysis, and is most probably a Type II error. A Type II error is when the results of the statistical test state that there is no difference, when there actually is a difference between the means (47:359).

Work Repetition. This was the next factor that showed a significant difference between manufacturing and the Air Force wide career group. It "measures the extent to which one performs the same tasks or faces the same type of problems in his or her job on a regular basis" (49:6). A high score here signifies an undesireabiy repetitive job. The acquisition group had the lowest mean score of all the groups analyzed, and it differed significantly from both contracting and all other Air Force groups. The Air Force wide group had the highest score.

Job Related Training. The last factor in this section showed manufacturing differing significantly from the Air Force wide career group. The other two groups also differed from this general Air Force group that had the highest mean score. This factor "measures the extent to which one is satisfied with on-the-job and technical training received" (49:6). The higher the score here, the greater the satisfaction the respondent has with this factor.

Job Performance Goals. A few notes on the results of the other factors may be enlightening. Contracting had a higher mean than the acquisition group for

the Job Performance Goals factor. This category "measures the extent to which job performance goals are clear, specific, realistic, understandable, and challenging" (49:5). Contracting had a lower score than the rest of the Air Force for that factor.

Task Autonomy. There was another example of the probable Type II error probably under Task Autonomy: "measures the degree to which the job provides freedom to do the work as one sees fit; discretion in scheduling, decision making, and means for accomplishing a job" (49:6). The manufacturing group had the highest mean and the smallest standard deviation. The third highest group, acquisition, differed from the other two groups, yet none of them differed from manufacturing. Manufacturing and contracting showed a significant difference when the Duncan test was used. The Duncan test, however, has a higher probability of type I errors than Tukey's (HSD) test (65:197-198).

Desired Repetitive Easy Tasks. Finally, the Type II error probably occurred for the Desired Repetitive Easy Tasks Factor. This time manufacturing had the same mean as the Air Force wide group and a smaller standard deviation. The Air Force wide group differed (higher) from acquisition, but manufacturing did not. This factor "measures the extent to which one desires his or her job to involve repetitive tasks or tasks that are easy to accomplish" (49:2).

Job Enrichment. As you can see in Table 10, only one factor did not show a significant difference between one or more of the four groups: the Need for Enrichment Index. This factor has the same formula as the Job Desires factor in the Work Itself section (see Appendix B). As defined in this section, this factor simply

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means that all the groups have similar desires for autonomy, personal growth, use of skills, etc. One interesting bit of information about this section is that the acquisition group differed from the Air Force wide group for every factor except for the Need for Enrichment Index (see Appendix C: Table 14, the Need for Enrichment Index is in Table 13 under Job Desires). In every case, the acquisition career field showed a significantly lower mean then the rest of the Air Force. These results are in line with McMahon's study (48:35). Only two of the nine factors showed a significant difference between manufacturing and some other group: Task Identity and Task Significance.

Task Identity and Task Significance. In both of these factors manufacturing differed (lower mean score) from the Air Force wide group. Task Identity "measures the degree to which the job requires completion of a 'whole' and identifiable piece of work from beginning to end", and Task Significance "measures the degree to which the job has a substantial impact on the lives or work of others; the importance of the job" (49:7). Contracting also had a higher mean than acquisition, which had a lower mean than the Air Force wide group for both factors.

Skill Variety and Job Feedback. Both of these factors exhibited an example of the Type II error mentioned earlier.

> Skill Variety measures the degree to which a job requires a variety of different skills and talents of the worker; skills required are valued by the worker.

> Job Feedback measures the degree to which carrying out the work activities required by the job results in the worker obtaining clear and direct information about job outcomes or information on good and poor performance. (49:7)

Table 10 - ANOVA of OAP Job Enrichment Factors
by the Four Career Fields

Factors	F	Prob > F
Skill Variety	44.24	0.0001
Task Identity	210.11	0.0001
Task Significance	112.36	0.0001
Job Feedback	15.06	0.0001
Need for Enrichment Index	1.66	0.1723
Job Motivation Index	27.00	0.0001
OJI Total Score	47.21	0.0001
Job Motivation Index Additive	10.01	0.0001
Motivation Potential Score	34.59	0.0001

These factors had lower means and standard deviations than the acquisition group and the rest of the Air Force group. The later two groups differed from each other yet the manufacturing group did not differ from the highest mean score in either factor.

The Motivation Factors. The Job Motivation Index, OJI Total Score, and Motivation Potential Score all exhibited a significantly lower mean for contracting over the Air Force wide career group.

The "Job Motivation Index . . . reflects the overall motivating potential of a job; the degree to which a job will prompt high internal work motivation on the part

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of job encumbents . . . OJI Total Score assesses one's perception of motivation provided by his or her job. (49:8)

A lower mean value in Motivation Potential Score implies that the job is not as motivating as the jobs associated with higher scores. In every one of the Motivation factors, manufacturing had a "Type II error."

Work Group Process. All of this sections factors exhibited significant differences between some factors, as seen in Table 11. Three of the factors showed the acquisition group had lower mean scores for their career field than the rest of the Air Force: Management & Supervision, Supervisory Communication Climate, and Organizational Communication Climate (see Appendix C: Table 15). This indicates that acquisition officers do not rate their Work Group Processes as highly as the typical Air Force officer.

Management & Supervision. This is the only factor that disclosed a significant difference between the manufacturing group and some other group: in this case, acquisition. Manufacturing's mean for this factor was significantly higher than acquisition's mean score. This implies that manufacturing officers give their supervisors higher scores in the support, guidance, work procedures, performance standards, and overall quality their managers possess, than the acquisition officers would give their managers.

Performance Barriers/Blockages. Contracting had significantly fewer hindrances from "additional duties, details, inadequate tools, equipment, or work space" (49:9) than the Air Force wide group. Once again the specter of the Type II

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**Table 11 - ANOVA of OAP Work Group Process Factors
by the Four Career Fields**

Factors	F	Prob > F
Performance Barriers/Blockages	19.62	0.0001
Management & Supervision	19.86	0.0001
Supervisory Communication Climate	18.42	0.0001
Organizational Communication Climate	56.68	0.0001

error appeared here; manufacturing had a higher mean and a lower standard deviation than contracting, yet it did not differ significantly from the Air Force wide group.

Organizational Communication Climate. For this factor, contracting had a higher mean than the acquisition group. The significance here is that contracting allows that there is more open communication and more adequate information is provided to do their jobs than the acquisition group sees in their organization.

Work Group Output. Once again, this section shows all the factors to have some difference between the four groups being compared, and that the acquisition group has a lower mean score than the Air Force wide group for all these factors (see Table 12). There is also only one factor that exhibits a difference for the manufacturing group.

Advancement/Recognition. "Measures one's awareness of advancement and recognition, and feelings of being prepared (i.e., learning new skills for

Table 12 - ANOVA of OAP Work Group Output Factors
by the Four Career Fields

Factors	F	Prob > F
Pride	130.07	0.0001
Advancement/Recognition	23.14	0.0001
Work Group Effectiveness	20.54	0.0001
Job Related Satisfaction	5.77	0.0006
General Organizational Climate	61.61	0.0001

promotion)" (49:11) Manufacturing had a higher mean score than the acquisition group for this factor. Interestingly, the acquisition group had the lowest score of any of the other groups for this factor (see Appendix C: Table 16).

Other Factors of Interest. The contracting group demonstrated greater pride in their work and obtained a higher degree of satisfaction with the factors surrounding their job than the acquisition group did. Acquisition officers did not rate their group environment as highly as the Air Force wide group did. The later group also had a higher view of the "quantity, quality, and efficiency of work generated" (49:2) in their group than did the former group.

Summary of Results

The results show that there are several differences among the four groups, but the number of significant differences for manufacturing are relatively few: only seven out of twenty-five. The general direction the results have shown is that the manufacturing

group scores higher than other groups the majority of the time on this test.

Additionally, this study revealed that, more often than not, the acquisition group had

lower factor scores than the contracting group. This fact has some significant

implications on this study, and they will be discussed in the next chapter along with

my recommendations based on these results.

V. Discussion and Recommendations

"Information is knowledge derived from data" (42:14). The last chapter presented the data, now this one will discuss the information contained within the results by applying the theories presented in Chapter II to the current situations. This chapter presents the theoretical implications for each of the OAP sections, discusses their relevance, hypothesizes solutions to these problems, and presents the recommendations of the author.

Analysis and Implications by OAP Factor

Work Itself. Manufacturing officers have fewer repetitive tasks than the general Air Force group. Furthermore, it does not appear that any of the groups are dissatisfied with their respective levels of repetitive tasks. This is probably due to the fact that their tasks involve responding to situations that develop at a contractor's facility or through evaluating the work, plans or performance of the contractor's employees. These types of tasks are uncertain and unpredictable by their nature.

It also appears that manufacturing and acquisition officers have more freedom to do their job the way they want than either the contracting or the general Air Force group. This situation is probably due to the fact that contracting officers have so many regulations and policies on how they have to do their jobs; there is not as much room for creativity and independence in their field. Whereas both manufacturing and acquisition officers often use their own judgement to determine their future course of action.

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Acquisition officers are less satisfied with the goals of their organization than contracting officers; while, contracting officers are less satisfied than the general Air Force group. This is probably due to the uncertainty of the procurement process: frequent cuts of program funds, numerous redesigns, and the uncertainty of operators about their requirements for their future weapon system. Although acquisition officers have greater task autonomy than contracting and the rest of the Air Force, they do not experience greater job satisfaction. This is probably due to the ambiguities of direction and uncertainty of future programs in the acquisition group.

Providing more autonomy to contracting officers, however, would be one way to improve their job satisfaction. Their jobs are very much controlled and limited in the amount of creativity and personal initiative by regulations (51:166-167).

Finally, the results show that procurement personnel all seem to be less satisfied with the amount of training they obtain compared with the rest of the Air Force. Equity theory applied to the training issue would dictate that the procurement group would be dissatisfied due to the inequity in the amount of training provided to their group compared with others. The only method of fixing this type of problem, according to the theory, would be to lower the procurement officer's expectations or significance to other officers, or provide more training. The answer should be self evident. These results and implications support Fox's conclusions about the lack of effective training in the acquisition career field (22:308-313).

Job Enrichment. Manufacturing officers had lower skill variety, task identity, task significance, and job feedback in their jobs than the general Air Force group. In

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fact, all the procurement groups had lower (assuming Type II error occurred for manufacturing, see Appendix C: Table 17) Motivating Potential Scores than the rest of the Air Force. This would imply that these procurement officers would be likely to have lower job satisfaction, higher turnover, and more absenteeism according to the Job Characteristics model. Even though the Task Autonomy factor was higher than the general Air Force group, the procurement officers combined MPS's were significantly different. This fact indicates that the autonomy alone is not enough to satisfy these officers. They need to have more responsibility so that the tasks they are working have importance in their organization, require more skills, and give them a sense of accomplishment and significance for having completed them. Maslow, Herzberg and Equity theory all support this conclusion that the individuals need to actualize themselves through internal motivators that enrich a job, so that after they have completed their work they can feel accomplishment and self worth equal to the rest of the Air Force.

Another point of interest is the differences between contracting and acquisition concerning task identity and significance. These differences could mean that contracting officers gain a greater degree of satisfaction out of their jobs than acquisition officers would. This could be a result of the more structured orientation of the contracting field compared with the uncertainties and constant changes associated with managing programs that are controlled by outside forces. The contracting officer can complete a task and point to a negotiated contract, for example, as a finished product. This officer can obtain satisfaction in the end product and pride in the

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accomplishment. Meanwhile, the acquisition officer may do the best job possible on a

project only to find out that the funds have been cut or the requirement no longer

exists. This results in frustration due to a lack of control and feelings of

insignificance because his labor was in vain.

Work Group Process. The results in this section present some conflicting

conclusions. Manufacturing seems more content with their management and

supervision, have fewer barriers to their perfc mance of their jobs, and enjoy better

communication with their supervisors than the acquisition group, but fall in the middle

in attitudes toward their organizational communication climate. These outcomes

appear to show that manufacturing would be better off in their present organization

than in the acquisition group. However, the contracting group did not demonstrate the

same relative contentment with their organization as manufacturing did. This may

mean that even though manufacturing is managed as an ancillary organization to

contracting, there is enough separation in the daily management of the two groups that

the problems of one may not affect the other. It could also mean that the survey just

did not cover enough ground to find a specific problem. For example, there was a

concern raised that the contracting organization did not provide the same level of

personnel support to their manufacturing people as they did to the contracting group.

The OAP showed no signs of dissatisfaction from this type of complaint.

Work Group Output. The fact that the manufacturing career field feels more

satisfied with their advancement and recognition opportunities implies that grouping

them with the acquisition officers may cause dissatisfaction. The theories presented in

Chapter II lead one to conclude that a change in this aspect of motivation would create

a deleterious affect on satisfaction, which in turn could cause poorer performance.

Since the acquisition group has the lowest scores in all of this sections factors, they

may not be a reasonable new home for manufacturing officers, if one wishes to

maintain high standards of work group output.

Conclusions

There appears to be little support for the conclusion that moving manufacturing

under the command of the acquisition organization will improve their satisfaction. In

fact, the OAP reveals that the acquisition group appears to have relatively poor job

satisfaction in comparison to contracting. On the other hand, there is little empirical

data to support the claim that there was much difference between the manufacturing

and acquisition groups as they existed during the time of the survey. The only three

OAP measures of job satisfaction that could be deleteriously affected from such a

move would be in the management supervision, supervisory communication climate,

and the advancement/recognition area.

However, this study did not produce any evidence that manufacturing officer's

job attitudes were affected when they were managed by the contracting organization.

There were several instances showing both positive and negative differences.

Therefore, it seems safe to assume that the acquisition organization would not affect

manufacturing's attitudes positively or negatively. The fact that each of the career

fields has different tasks and jobs seems to be the only cause for the significant

differences between the fields. Since the OAP does not appear to be able to predict

whether one group can change the attitudes of another, the best way to improve

satisfaction may be through eliminating dissatisfiers and providing more motivators in

the proper areas.

Recommendations

As mentioned earlier, in past research and this study, impotent training,

incapacitating regulations, and crippling micromanagement are problems that are

causing dissatisfaction among acquisition officers. Inexperienced and untrained

officers lack the skills to excel, which translates into a loss of pride in their work and

feelings of insignificance. Regulations stifle initiative and creativity while creating

unnecessary tasks; these forced structures and inefficient procedures cause feelings of

frustration. Since the correlation between performance and satisfaction has been

shown to exist in jobs very similar to those under study, the effort to alleviate many of

these inequities should improve the entire acquisition process.

Total Quality Management (TQM) is an Air Force initiative that attempts to

resolve issues like those raised in this study. TQM focuses on continually improving a

work process to make organizations more efficient and effective. It is also a

philosophy that attacks the cause of ailments in the system, rather then focusing on the

symptoms. Some of the major goals of TQM are to remove barriers that rob a worker

of his right to pride in workmanship, institute training on the job, as well as a

vigorous program of education (53). The three issues raised above may benefit from

TQM if the Air Force can be committed to carrying out steps necessary.

Training. The Air Force has attempted to implement several programs to improve the training and define the career paths of procurement officers since the OAP survey was completed (36). However, the effectiveness of these programs has yet to be determined. To this day, new lieutenants will report to a base and start working in procurement jobs without any prior training to prepare them for what will be expected of them. An Air Force pilot spends numerous hours in ground school training before he even begins flight training. Pilots are not expected to jump into an airplane the first day and be able fly an average mission. Yet, this is just what appears to be expected of procurement officers. Acquisition managers need to ensure that adequate training is available in order to begin the improvement of their officer's competence. This will of course lead to more satisfaction and, in all probability, to improved performance.

The procurement budget is a substantial portion of the total Air Force budget. Effective management of these huge sums of money could save millions of dollars from those required to procure its weapon systems. If the personnel who manage the procurement of these systems are dissatisfied and undertrained, the potential savings will instead become burdensome additional costs. Dissatisfaction in the areas mentioned above can lead to poor performance, higher absenteeism, and greater turnover. Replacement staffs will be inexperienced and, as shown above, undertrained. Effective measures to reverse these inadequacies could easily make up for more savings than the additional costs required to enact them.

Regulations. This is another area that needs special attention and a concerted

effort to resolve the problems in the procurement field. Gansler suggests that defense

acquisition should be labeled a "regulated industry" due to all the "policy guidance" it

receives (23:151-154). Congress is not the only responsible party in creating

regulations. Whenever a regulation is passed down from Congress or the DoD, each

service creates its own specific supplement to that regulation. Then each command

that the regulation affects makes a supplement. Next, the divisions add their names to

the list of supplements, and finally, the Program Offices create operating instructions

to implement the specific regulation. An excellent example of this is the Federal

Acquisition Regulation (FAR) (62). The FAR was originally developed to consolidate

all the Federal Government's regulations on acquisition. The idea was to reduce the

variability of regulations within the government and to make it easier to buy things

jointly for all government users (23:152). However, once the FAR was completed,

everyone needed to make their own specific qualifications to it. First the DoD

supplemented the FAR, then the Department of the Air Force wrote their regulation,

and AFSC and Air Force Logistics Command created several of their own specific

supplements (13, 14, 16). Of course, each of the product divisions needed to

supplement the FAR for their peculiar requirements (1). Finally, the System Program

Offices write Operating Instructions on how, when, and where to do procedures on the

job originally outlined in the FAR (20).

Common sense and a little faith in the ability of program managers to handle the

level of detail cited in these regulations could eliminate the need for such extensive

instructions. The regulations can be tightened up at their place of origin to eliminate the need for many of the supplements, while maintaining the applicability to each of the commands. Continuing this type of regulated activity hampers and frustrates an acquisition officer in trying to accomplish his assigned tasks. Creating excess work and implementing more controls will not improve a workers task identity, task significance, skill variety, task autonomy or job feedback; it simply creates dissatisfaction. This, in turn, leads to reduced performance.

Allowing the program managers enough autonomy to control the level of detail now governed by regulations would require a degree of trust that is uncommon in the government bureaucracy of today. However, as mentioned in Chapter I, that may be the best way to overcome the budget restraints facing the acquisition commands and to retain the personnel necessary to manage this country's weapon procurement business.

Responsibility and Authority. Of course giving greater responsibility and authority is not necessarily an act of faith, trusting that everything will work out in the end. There are methods of preventing fraud, waste and abuse beforehand to make this type of move more palatable. The first thing to do is simply punish the abusers. The current government system coddles the abusers and provides loopholes and shelters that protect them from prosecution. A more obvious and direct punishment for stepping over the line may help prevent such situations from occurring.

Another method of precluding abuses is to provide a definite career path for acquisition managers, equip them with proper education and the incentives to remain in the military acquisition field. That way the decisions that these individuals make

will be based on sound practice, knowledge and experience. They will not have to have to follow a rigid regulation to ensure they do it right; they will know how, and will take pride in procurring quality weapon systems.

TQM. All of these moves require a radical change of philosophy that has traditionally been difficult for the DoD to make. It certainly will be difficult to sell to Congress. If the process is begun by the military, then Congress may follow along. The Air Force has been trying to begin changing some of its archaic practices through the TQM technique. This philosophy of continual improvement may be one way to bring about the changes necessary. However, there are some inherent problems with this philosophy that can easily stop its potential success in the DoD.

One of the main problems is that DoD personnel have seen hundreds of improvement programs come and go, with little impact on the change to the organization. Bureaucracy is by definition resistant to change, and is elastic when it comes to short term improvement projects: that is it often returns to its previous state.

> Niccolo Machiavelli wrote in 1513, in The Prince, that
> . . . there is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things. Because the innovator has for enemies all those who have done well under the old conditions, and lukewarm defenders in those who may do well under the new. This coolness arises partly from fear of the opponents, who have the laws on their side and partly from the incredulity of men, who do not readily believe in new things until they have had a long experience of them. Thus, it happens that whenever those who are hostile have the opportunity to attack they do it like partisans, whilst the others defend lukewarmly. . . . (23:321-322)

Another issue is that TQM is defined as being a long term project (53:7), however, the DoD is noted for its short term commitment to quality programs

(23:322). Gansler suggested one method of reforming the DoD may be to radically change everything at once. "To shake the organization up so much that you nearly break it" (26). That may be what is required with a determinedly conservative organization of government and military employees.

An alternative method for bringing about changes is also defined in TQM's method of working change top - down. That is, if top management is committed to supporting TQM and its objectives, then real change may come about. However, if top management continues to only say that they are behind this program, without demonstrating any actual support, the program will fail along with all the others before it (12:7-8). Top management needs to provide real responsibility and authority to acquisition managers, at all levels, to begin these changes. They also need to remove many of the excessively restrictive regulations that inhibit motivation. Finally, management must provide the education necessary to enable their people to succeed. Motivation and job attitudes can improve, when these types of measures are applied and maintained.

Future Research

This study can be used as a baseline of manufacturing attitudes at a time before most of the recent reforms were initiated. Other studies could examine whether the job attitudes remain the same today as they were over the years 1981 - 1985. Any improvement in job attitudes may be a good indicator that the reforms are working; conversely, indications of similar or reduced job attitudes may show that reforms are not satisfying this to career field, or that they have not begun working.

Summary

The actual differences between the three career fields examined here are not as consequential as the differences these fields have with the rest of the Air Force. The possible causes of these differences are the lack of adequate training, an overabundance of regulations, and policies that restrict the ability of these officers to exercise authority and responsibility. Total Quality Management may be an effective tool to improve these problems. However, reform will not come about without continual improvement and active top management commitment to the Total Quality Program.

Appendix A: Organizational Assessment Package Survey

PRIVACY ACT STATEMENT

In accordance with paragraph 30, AFR 12-35, The Air Force Privacy Act
Program, the following information about this survey is provided:

     a. Authority: 10 U.SC 8012, Secretary of the Air Force: Powers and
Duties, Delegation by Compensation E.O. 9397, 22 Nov 43. Numbering System
for Federal Accounts Relating to Individual Persons.

     b. Principal Purpose: The survey is being conducted to assess your
organization from a Leadership and management perspective.

     c. Routine Uses: Information provided by respondents will be treated confidentially.
The averaged data will be used For organizational strength and weakness identification
and Air Force wide research and development purposes.

     d. Participation: Response to this survey is voluntary. Your
cooperation in this effort is appreciated.

(PLEASE DO NOT TEAR, MARK ON, OR OTHERWISE DAMAGE THIS BOOKLET)

SCN 81-14

GENERAL INFORMATION

The leaders of your organization are genuinely interested in improving the overall conditions within their areas of responsibility. Providing a more satisfying Air Force way of life and increasing organizational effectiveness are also goals. One method of reaching these goals is by continual refinement of the management processes of the Air Force. Areas of concern include job related issues such as leadership and management: training and utilization; motivation of and concern for people; and the communication process.

This survey is intended to provide a means of identifying areas within your organization needing the greatest emphasis in the immediate future. You will be asked questions about your job, work group, supervisor, and organization. For the results to useful, it is important that you respond to each statement thoughtfully, honestly, and as frankly as possible. Remember, this is not a test, there are no right or wrong responses.

Your completed response sheet will be processed by automated equipment, and be summarized in statistical form. Your *individual response will remain confidential, as it* will be combined with the responses of many other persons and used for organizational feedback and possibly Air Force wide studies.

KEY WORDS

The following should be considered as key words throughout the survey:

--Supervisor: The person to whom you report directly.

--Work Group: All persons who report to the same supervisor that you do.

--Organization: Your squadron. However, if you work in staff /support agencies, the division or directorate would be your organization.

INSTRUCTIONS

1. All statements may be answered by filling in the appropriate spaces on the response sheet provided. If you do not find a response that fits your case exactly, use the one that is the closest to the way you feel.

2. Be sure that you have completed Section 1 of the response sheet, as instructed by the survey administrator, before beginning Section 2.

3. Please use the pencil provided, and observe the following:

   --Make heavy black marks that fill the spaces.
   --Erase cleanly any responses you wish to change.
   --Make no stray markings of any kind on the response sheet.
   --Do not staple, fold or tear the response sheet.
   --Do not make any markings on the survey booklet.

4. The response sheet has a 0-7 scale. The survey statements normally require a 1-7 response. Use the zero (0) response only if the statement truly does not apply to your situation. Statements are responded to by marking the appropriate space on the response sheet as in the following example:

   Using the scale below, evaluate the sample statement.

   1 = Strongly disagree   5 = Slightly agree
   2 = Moderately disagree   6 = Moderately agree
   3 = Slightly disagree   7 = Strongly agree
   4 = Neither agree nor disagree

Sample Statement: The information your work group receives from other work groups is helpful.

If you moderately agree with the sample statement, you would blacken the oval (6) on the response sheet.

                           NA
Sample Response: (0) (I) (2) (3) (4) (5) (6) (7)

5. When you have completed the survey, please turn in the survey materials as instructed in the introduction.

BACKGROUND INFORMATION

This section of the survey concerns your background. The information requested is to insure that the groups you belong to are accurately represented and not to identify you as an individual. Please uses the separate response sheet and darken the oval which corresponds to your response to each question.

I. Total years in the Air Force:

1. Less than 1 year.
2. More than 1 year, less than 2 years.
3. More than 2 years, less than 3 years.
4. More than 3 years, less than 4 years.
5. More than 4 years, less than 8 years.
6. More than 8 years, less than 12 years.
7. More than 12 years.

2. Total months in present career field:

1. Less than 1 month.
2. More than 1 month, less than 6 months.
3. More than 6 months, less than 12 months.
4. More than 12 months, less than 18 months.
5. More than 18 months, less than 24 months.
6. More than 24 months, less than 36 months.
7. More than 36 months.

3. Total months at this station:

1. Less than 1 month.
2. More than 1 month, less than 6 months.
3. More than 6 months, less than 12 months.
4. More than 12 months, less than 18 months.
5. More than 18 months, less than 24 months.
6. More than 24 months, less than 36 months.
7. More than 36 months.

4. Total months in present position:

    1. Less than 1 month.
    2. More than 1 month, less than 6 months.
    3. More than 6 months, less than 12 months.
    4. More than 12 months, less than 18 months.
    5. More than 18 months, less than 24 months.
    6. More than 24 months, less than 36 months.
    7. More than 36 months.

5. Your Ethnic Group is:

    1. American Indian or Alaskan Native
    2. Asian or Pacific Islander
    3. Black, not of Hispanic Origin
    4. Hispanic
    5. White, not of Hispanic Origin
    6. Other

6. Your highest education level obtained is:

    1. Non-high school graduate
    2. High school graduate or GED
    3. Less than 2 years college
    4. Two years or more college
    5. Bachelors Degree
    6. Masters Degree
    7. Doctoral Degree

7. Highest level of professional military education (residence or correspondence):

    0. None or not applicable
    1. NCO Orientation Course or USAF Supervisor Course (NCO Phase 1 or 2)
    2. NCO Leadership School (NCO Phase 3)
    3. NCO Academy (NCO Phase 4)
    4. Senior NCO Academy (NCO Phase 5)
    5. Squadron Officer School
    6. Intermediate Service School (i.e., ACSC, AFSC)
    7. Senior Service School (if. AWC, ICAF, NWC)

8. How many people do you directly supervise?

   1. None
   2. 1
   3. 2
   4. 3

   5. 4 to 5
   6. 6 to 8
   7. 9 or more

9. For how many people do you write performance reports?

   1. None
   2. 1
   3. 2

   5. 4 to 5
   6. 6 to 8
   7. 9 or more

10. Does your supervisor actually write your performance reports?

   1. yes   2. no   3. not sure

11. Which of the following "best" describes your marital status?

   0. Not Married
   1. Married: Spouse is a civilian employed outside home.
   2. Married: Spouse is a civilian employed outside home- geographi cally separated.
   3. Married: Spouse not employed outside home
   4. Married: Spouse not employed outside home- geographically separated.
   5. Married: Spouse is a military member.
   6. Married: Spouse is a military member-geographically separated.
   7. Single Parent.

12. What is your usual work schedule?

   1. Day shift, normally stable hours.
   2. Swing Shift (about 1600-2400)
   3. Mid shift (about 2400-0800)
   4. Rotating shift schedule
   5. Bay or shift work with irregular hours.
   6. Frequent TDY/travel or frequently on-call to report to work.
   7. Crew schedule.

13. How often does your supervisor hold group meetings?

    1. Never   4. Weekly
    2. Occasionally   5. Daily
    3. Monthly   6. Continuously

14. How often are group meetings used to solve problems and establish goals?

    1. Never   3. About half the time
    2. Occasionally   4. All of the time

15. What is your aeronautical rating and current status?

    1. Nonrated, not on aircrew   3. Rated, in crew/operations job
    2. Nonrated, now on aircrew 4. Rated, in support job

16. Which of the following best describes your career or employment intentions?

    1. Planning to retire in the next 12 months
    2. Will continue in/with the Air Force as a career
    3. Will most likely continue in/with the Air Force as a career
    4. May continue in/with the Air Force
    5. Will most likely not make the Air Force a career
    6. Will separate/terminate from the Air Force as soon as possible

JOB INVENTORY

Below are items which relate to your job. Read each statement carefully and then decide to what extent the statement is true of your job. Indicate the extent to which the statement is true for your job by choosing the phrase which best represents your job.

1 = Not at all   5 = To a fairly large extent
2 = To a very little extent   6 = To a great extent
3 = To a little extent   7 = To a very great extent
4 = To a moderate extent

Select the corresponding number for each question and enter it on the separate response sheet.

17. To what extent does your job require you to do many different things, using a variety of your talents and skills?

18. To what-extent does your job involve doing a whole task or unit of work?

19. To what extent is your job significant, in that it affects others in some important way?

20. To what extent does you job provide a great deal of freedom and independence in scheduling your work?

21. To what extent does your job provide a great deal of freedom and independence in selecting your own procedures to accomplish it?

22. To what extent are you able to determine how well you are doing you job without feedback from anyone else?

23. To what extent do additional duties interfere with the performance of your primary job?

24. To what extent do you have adequate tools and equipment to accomplish your job?

25. To what extent is the amount of work space provided adequate?

1 = Not at all   5 = To a fairly large extent
2 = To a very little extent   6 = To a great extent
3 = To a little extent   7 = To a very great extent
4 = To a moderate extent

26. To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?

27. To what extent does doing your job well affect a lot of people?

28. To what extent does your job provide you with the chance to finish completely the piece of work you have begun?

29. To what extent does your job require you to use a number of complex skills?

30. To what extent does your job give you freedom to do your work as you see fit?

31. To what extent are you allowed to make the major decisions require to perform your job well?

32. To what extent are you proud of your job?

33. To what extent do you feel accountable to your supervisor in accomplishing your job?

34. To what extent do you know exactly what is expected of you in performing your job?

35. To what extent are your job performance goals difficult to accomplish?

36. To what extent are you job performance goals clear?

37. To what extent are your job performance goals specific?

38. To what extent are your job performance goals realistic?

39. To what extent do you perform that same tasks repeatedly within a short period of time?

1 = Not at all   5 = To a fairly large extent
2 = To a very little extent   6 = To a great extent
3 = To a little extent   7 = To a very great extent
4 = To a   moderate extent

40. To what extent are faced with the same type of problem on a weekly basis?

41. To what extent are you aware of promotion/advancement opportunities that affect you?

42. To what extent do co-workers in your work group maintain high standards of performance?

43. To what extent do you have the opportunity to progress up your career ladder?

44. To what extent are you being prepared to accept increased responsibility?

45. To what extent do people who perform well receive recognition?

46. To what extent does your work give you a feeling of pride?

47. To what extent do you have the opportunity to learn skills which will improve your promotion potential?

48. To what extent do you have the necessary supplies to accomplish your job?

49. To what extent do details (tasks not covered by primary or additional duty descriptions) interfere with the performance of your primary job?

50. To what extent does a bottleneck in your organization seriously affect the flow of work either to or from you group?

JOB DESIRES

The statements below deal with job related characteristics. Read each statement and choose the response which best represents how much you would like to have each characteristic in your job.

In my job, I would like to have the characteristics described:

1 = Not at all   5 = A large amount
2 = A slight amount   6 = A very large amount
3 = A moderate amount 7 = An extremely large amount
4 = A fairly large a mount

51. Opportunities to have independence in my work.

52. A job that is meaningful.

53. An opportunity for personal growth in my job.

54. Opportunities in my work to use my skills.

55. Opportunities to perform a variety of tasks.

56. A job in which tasks are repetitive.

57. A job in which tasks are relatively easy to accomplish.

SUPERVISION

The statements below describe characteristics of managers or supervisors. Indicate your agreement by choosing the phrase which best represents your attitude concerning your supervisor.

1 = Strongly disagree   5 = Slightly agree
2 = Moderately disagree   6 = Moderately agree
3 = Slightly disagree   7 = Strongly agree
4 = Neither agree nor disagree

Select the corresponding number for each statement and enter it on the separate response sheet.

58. My supervisor is a good planner.

59. My supervisor sets high performance standards.

60. My supervisor encourages teamwork.

61. My supervisor represents the group at all times.

62. My supervisor establishes good work procedures.

63. My supervisor has made his responsibilities clear to the group.

64. My supervisor fully explains procedures to each group member.

65. My supervisor performs well under pressure.

66. My supervisor takes time to help me when needed.

67. My supervisor asks members for their ideas on task improvements.

68. My supervisor explains how my job contributes to the overall mission.

69. My supervisor helps me set specific goals.

70. My supervisor lets me know when I am doing a good job.

71. My supervisor lets me know when I am doing a poor job.

72. My supervisor always helps me improve my performance.

73. My supervisor insures that I get job related training when needed.

74. My job performance has improved due to feedback received from my supervisor.

75. When I need technical advice, I usually go to my supervisor.

76. My supervisor frequently gives me feedback on how well I am doing my job.

WORK GROUP PRODUCTIVITY

The statements below deal with the output of your work group. The term "your work group" refers to you and your co-workers who work for the same supervisor. Indicate your agreement with the statement by selecting the phrase which best expresses your opinion.

1 = Strongly disagree	4 = Neither agree nor disagree
2 = Moderately disagree	5 = Slightly agree
3 = Slightly disagree	6 = Moderately agree
	7 = Strongly agree

Select the corresponding number for each statement and enter it on the separate response sheet.

77. The quantity of output of your work group is very high.

78. The quality of output of your work group is very high.

79. When high priority work arises, such as short suspenses, crash programs, and schedule changes, the people in my work group do an outstanding job in handling these situations.

80. Your work group always gets maximum output from available resources (e.g., personnel and material).

81. Your work group's performance in comparison to similar work groups is very high.

ORGANIZATION CLIMATE

Below are items which describe characteristics of your organization. The
term "your organization" refers to your squadron or staff agency. Indicate your agreement
by choosing the phrase which best represents your opinion concerning your organization.

1 = Strongly disagree   5 = Slightly agree
2 = Moderately disagree   6 = Moderately agree
3 = Slightly disagree   7 = Strongly agree
4 = Neither agree nor disagree

Select the corresponding number for each item and enter it on the separate
response sheet.

82. Ideas developed by my work group are readily accepted by
management personnel above my supervisor.

83. My organization provides. adequate information to my work group

85. My work group is usually aware of important events and situations.

86. My complaints are aired satisfactorily.

87. My organization is very interested in the attitudes of the group
member toward their jobs.

88. My organization has a very strong interest in the welfare of its
people.

89. I am very proud to work for this organization.

90. I feel responsible to my organization in accomplishing its mission.

91. The information in my organization is widely shared so that those
need it have it available.

92. Personnel in my unit are recognized for outstanding performance.

93. I am usually given the opportunity to show or demonstrate my work to
others.

1 = Strongly disagree   5 = Slightly agree
2 = Moderately disagree   6 = Moderately agree
3 = Slightly disagree   7 = Strongly agree
4 = Neither agree nor disagree

94. There is a high spirit of teamwork among my coworkers.

95. There is outstanding cooperation between work groups of my organization.

96. My organization has clear-cut goals.

97. I feel motivated to contribute my best efforts to the mission of my organization.

98. My organization rewards individuals based on performance.

99. The goals of my organization are reasonable.

100. My organization provides accurate information to my work group.

JOB RELATED ISSUES

The items below are used to determine how satisfied you are with specific
job related issues. Indicate your degree of satisfaction or dissatisfaction with each issue
by choosing the most appropriate phrase.

1 = Extremely dissatisfied	5 = Slightly satisfied
2 = Moderately dissatisfied	6 = Moderately satisfied
3 = Slightly dissatisfied	7 = Extremely satisfied
4 = Neither satisfied nor dissatisfied	

Select the corresponding number for each question and enter it on the
separate response sheet.

101. Feeling of Helpfulness
    The chance to help people and improve their welfare through the
    performance of my job. The importance of my job performance to the
    welfare of others

102. Co-Worker Relationship
    My amount of effort compared to the effort of my co-workers, the
    extent to which my co-workers share the load, and the spirit of
    teamwork which exists among my co-workers.

103. Family Attitude Towar ⁴
    The recognition and the pride my family has in the work I do.

104. On-the-Job Training
    The OJT instructional methods and instructors competence.

105. Technical Training (Other than OJT)
    The technical training I have received to perform my current job.

106. Work Schedule
    My work schedule, flexibility and regularity of my work schedule;
    the number of hours I work per week.

1 = Extremely dissatisfied   5 = Slightly satisfied
2 = Moderately dissatisfied   6 = Moderately satisfied
3 = Slightly dissatisfied   7 = Extremely satisfied
4 = Neither satisfied nor dissatisfied

107. <u>Job Security</u>

108. <u>Acquired Valuable Skills</u>
The chance to acquire valuable skills in my job which prepare me for future opportunities.

109. <u>My Job as a Whole</u>

ORGANIZATIONAL ASSESSMENT

PACKAGE SURVEY

FACTORS

AND

VARIABLES

January 1986

**LEADERSHIP AND MANAGEMENT DEVELOPMENT CENTER
AIR UNIVERSITY**
Maxwell Air Force Base, Alabama 36112-5712

Factor and Variables of the
Organizational Assessment Package

The OAP is a 109-item survey questionnaire designed jointly by the
Air Force Human Resources Laboratory and the Leadership and Management
Development Center (LMDC) and is used to aid LMDC in its missions to: (a)
conduct research on Air Force system issues using information in the OAP
database, (b) provide leadership and management training, and (c) provide
management consultation service to Air Force commanders upon request.

Allowable responses to the attitudinal items on the survey range
from 1 (low) to 7 (high). The attitudinal items are grouped into 25
factors that address such areas as the job itself, management and
supervision, communication, and performance in the organization. Each data
record consists of 7 externally coded descriptors and 24 demographic items
as well as the responses to the 93 attitudinal items.

The factors measured by the OAP are grouped into a systems model to
assess three aspects of a work group: input, process, and output (adapted
from McGrath's model).

Input. In LMDC's adaptation of the model, input is comprised of
demographics, work itself, and job enrichment.

A. Demographics. Descriptive or background information about the
respondents to the OAP survey.

B. <u>Work Itself.</u> The work itself has to do with the task properties

(technologies) and environmental conditions of the job. It assesses the

patterns of characteristics members bring to the group or organization,

and patterns of differentiation and integration among position and roles.

The following OAP factors measure the work itself:

    806 - Job Desires (Need For Enrichment)
    810 - Job Performance Goals
    812 - Task Characteristics
    813 - Task Autonomy
    814 - Work Repetition
    816 - Desired Repetitive Easy Tasks
    823 - Job Related Training
            Job Influences (not a statistical factor)

C. <u>Job Enrichment.</u> Measures the degree to which the job itself

interesting, meaningful, challenging, and responsible. The following OAP

factors measure job enrichment:

    800 - Skill Variety
    801 - Task Identity
    802 - Task Significance
    804 - Job Feedback
    806 - Need for Enrichment Index (Job Desires)
    807 - Job Motivation Index
    808 - OJI Total Score
    809 - Job Motivation Index - Additive
    825 - Motivation Potential Score

D. <u>Work Group Process.</u> The work group assesses the pattern of activity

and interaction among the group members. The following OAP factors measures

leadership and the work group process:

805 - Performance Barriers/Blockages (Work Support)
808 - Management and Supervision
819 - Supervisory Communications Climate
820 - Organizational Communications Climate
     Work interferences (not a statistical factor)
     Supervisory Assistance (not a statistical factor)

E. <u>Work Group Output.</u> Measures task performance, group development,

and effects on group members. Assesses the quantity and quality of task

performance and alteration of the group's relation to the environment.

Assesses changes in positions and role patterns, and in the development of

norms. Assesses changes on skills and attitudes, and effects on

adjustment. The following OAP factors measure the work group output:

811 - Pride
817 - Advancement/Recognition
821 - Work Group Effectiveness (Perceived Productivity)
822 - Job Related Satisfaction
824 - General Organizational Climate

<u>EXTERNALLY CODED DESCRIPTORS</u>

Batch Number

Julian Date of Survey

Major Command

Base Code

Consultation Method

Consultant Code

Survey Version

(Note: These items are concatenated to each data record during EDP

processing.)

DEMOGRAPHIC ITEMS (NOT A STATISTICAL FACTOR)

Variable Number	Statement Number	Statement
-	-	Supervisor's Code
-	-	Work Group Code
-	-	Sex
-	-	Your age is
-	-	You are (officer, enlisted, GS, etc.)
-	-	Your pay grade is
-	-	Primary AFSC
-	-	Duty AFSC

(Note: The above items are on the response sheet.)

001	-	[Not used)
002	-	(Not used)
003	-	Total Years in the Air Force:

1. Less than 1 year
2. More than 1 year, less than 2 years
3. More than 2 years, less than 3 years
4. More than 3 years, less than 4 years
5. More than 4 years, less than 8 years
6. More than 8 years

Variable Number	Statement Number	Statement

004   2   Total months in present career field:

1. Less than 1 month
2. More than 1 month, less than 6 months
3. More than 6 months, less than 12 months
4. More than 12 months, less than 18 months
5. More than 18 months, less than 24 months
6. More than 24 month, less than 36 months
7. More than 36 months

005   3   Total months at this station:

1. Less than 1 month
2. More than 1 month, less than 6 months
3. More than 6 months, less than 12 months
4. More than 12 months, less than 18 months
5. More than 18 months, less than 24 months
6. More than 24 month, less than 36 months
7. More than 36 months

006   4   Total months in present position:

1. Less than 1 month
2. More than 1 month, less than 6 months
3. More than 6 months, less than 12 months
4. More than 12 months, less than 18 months
5. More than 18 months, less than 24 months
6. More than 24 month, less than 36 months
7. More than 30 months

007   5   Your Ethnic Group is:

1. American Indian or Alaskan Native
2. Asian or Pacific Islander
3. Black, not of Hispanic Origin
4. Hispanic
5. White, not of Hispanic Origin
6. Other

Variable Number	Statement Number	Statement

008   11   Which of the following "best" describes your marital status?

0. Not married.
1. Married: Spouse is a civilian employed outside home.
2. Married: Spouse is a civilian employed outside home - geographically separated.
3. Married: Spouse not employed outside home.
4. Married: Spouse not employed outside home - geographically separated.
5. Married: Spouse is a military member.
6. Married: Spouse is a military member - geographically separated.
7. Single parent.

009   6   Your highest education level obtained is:

1. Non-high school graduate
2. High school graduate or GED
3. Less than two years college
4. Two years or more college
5. Bachelors Degree
6: Masters-Degree

010   7   Highest level of professional military education (residence or correspondence):

0. None or not applicable
1. NCO Orientation Course or USAF Supervisor
2. Course (NCO Phase 1 or 2)
3. NCO Leadership School (NCO Phase 3)
4. NCO Academy (NCO Phase 4)
5. Squadron Officer School
6. Intermediate Service School (i.e., ACSC, AF5C)
7. Senior Service School (i.e., AWC, ICAF, NWC)

Variable Number	Statement Number	Statement
011	8	How many people do you directly supervise?

1. None   5. 4 to 5
2. 1   6. 6 to 8
3. 2   7. 9 or more
4. 3

Variable Number	Statement Number	Statement
012	9	For how many people do you write performance reports?

1. None   5. 4 to 5
2. 1   6. 6 to 8
3. 2   7. 9 or more
4. 3

Variable Number	Statement Number	Statement
013	10	Does your supervisor actually write your performance report?

1. Yes   2. No   3. Not sure

Variable Number	Statement Number	Statement
014	11	Your work requires you to work primarily:

1. Alone
2. With one or two people
3. As a small work group (3-5 people)
4. As a large work group (6 or more people)
5. Other

Variable Number	Statement Number	Statement
015	12	What is your usual work schedule?

1. Day shift, normally stable hours
2. Swing shift (about 1600-2400)
3. Mid shift (about 2400-0800)
4. Rotating shift schedule
5. Day or shift work with irregular/unstable hours
6. Frequent TDY/travel or frequently on-call
   to report to work
7. Crew schedule

Variable Number	Statement Number	Statement
016	13	How often does your supervisor hold group meetings?

1. Never   4. Weekly
2. Occasionally   5. Daily
3. Monthly   6. Continuously

Variable Number	Statement Number	Statement
017	14	How often are group meetings used to solve problems and establish goals?

1. Never   3. About half the time
2. Occasionally   4. All of the time

Variable Number	Statement Number	Statement
018	15	What is your aeronautical rating and current status?

1. Nonrated, not on aircrew
2. Nonrated, now on aircrew
3. Rated, in crew/operations job
4. Rated, in support job

Variable Number	Statement Number	Statement
019	16	Which of the following best describes your career or employment intentions?

1. Planning to retire in the next 12 months
2. Will continue in/with the Air Force as a career
3. Will most likely continue in/with the Air Force
4. May continue in/with the Air Force
5. Will most likely not make the Air Force a career
6. Will separate/terminate from the Air Force as soon as possible.

NOTE: Variable 008, Statement 11 was added to the OAP on 19 Jan 80 and replaced variable 014 which appeared earlier. Although no longer used, Variable 014 is still shown because data collected from about 25,000 samples for this variable are still in the data base.

FACTORS

Each 800 series factor consists of two or more variables which correspond to statements in the OAP. A mean score can be derived for each factor except 805, 807, 808, 809, and 825 by using a "straight average." The formula for computing the exceptions is indicated.

Factor 800 = Skill Variety: Measure the degree to which a job requires a variety of different tasks or activities in carrying out the work; involves the use of a number of different skills and talents of the worker; skills required are valued by the worker.

Variable Number	Statement Number	Statement
201	17	To what extent does your job require you to do many different things, using a variety of your talents and skills?
212	29	To what extent does your job require you to use a number of complex skills?

Factor 801 - Task Identity: Measures the degree to which the job requires completion of a "whole" and identifiable piece of work from beginning to end.

Variable Number	Statement Number	Statement
202	18	To what extent does your job involve doing a whole task or unit of work.

211	28	To what extent does your job provide you with a chance to finish completely the piece of word you have begun?

Factor 802 - Task Significance: Measures the degree to which the job has

a substantial impact on the lives or work of others; the importance of the

job.

Variable Number	Statement Number	Statement
203	19	To what extent is you job significant in that it affects others in some important way?
210	27	To what extent does doing your job well affect a lot of people?

Factor 804 - Job Feedback: Measures the degree to which carrying out the

work activities required by the job results in the worker obtaining clear and

direct information about job outcomes or information on good and poor performance.

Variable Number	Statement Number	Statement
272	22	To what extent are you able to determine how well you are doing your job without feedback from anyone else?
210	27	To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?

Factor 805 - Work Support: Measures the decree to which work

performance is hindered by additional duties, details, inadequate tools,

equipment. or work space.

Variable Number	Statement Number	Statement
206	23	To what extent do additional duties interfere with the performance of your primary job?
207	24	To what extent do you have adequate tools and equipment to accomplish your job?
208	25	To what extent is the amount of work space provided adequate?

Formula (8 - 206 207 208)/3

Factor 606 - Need For Enrichment Index (Job Desires): Has to do with job

related characteristics (autonomy, personal growth, use of skills, etc.)

that the individual would like in a job.

Variable Number	Statement Number	Statement

(In my job, I would like to have the characteristics

described -- from "not at all" to "an extremely large amount")

249	51	Opportunities to have -independence in my work.
250	52	A job that is meaningful.
251	53	The opportunity for personal growth in my job.

252	54	Opportunities in my work to use my skills.
253	55	Opportunities to perform a variety of tasks.

Factor 807 - Motivation Index: A composite index derived from the six

job characteristics that reflects the overall "motivating potential" of a

job the degree to which a job will prompt high internal work motivation on

the part of job incumbents.

Index is computed using the following factors:

> 800   Skill variety
> 801   Task identity
> 802   Task significance
> 805   Performance barriers/blockages
> 813   Task autonomy
> 804   Job feedback

Formula   ((800 + 801 + 802 + 805)/4) * 813 * 804

Factor 808 - OJI Total Score: Assesses ones perception of motivation
provided by his or her job. This factor is a variation of a scale employed
by other job motivation theorists.

Score is computed using the variables in the following formula:

Formula   (V201 + V202 + V203 + V270 + V272 + 8 - V206 + V207 + V208
           + V209 + V210 + V211 + V212 + V213)

Factor 809 - Job Motivation Index ---- Additive: This factor is a variation of a scale
employed by other job motivation theorists.

Index is computed using the following factors:

800	Skill variety
801	Task identity
802	Task significance
805	Performance barriers/blockages
813	Task autonomy
804	Work repetition

Formula $((800 + 801 + 802 + 805)/ 4) + 813 + 804$

Factor 810 - Job Performance Goals: Measures the extent to which job

performance goals are clear, specific, realistic, understandable. and

challenging.

Variable Number	Statement Number	Statement
217	34	To what extent do you know exactly what is expected of you in performing your job?
218	35	To what extent are your job performance goals difficult to accomplish?
273	36	To what extent are your job performance goals clear?
274	37	To what extent are your job performance goals specific?
221	38	To what extent are your job performance goals realistic?

Factor 811 - Pride: Measures the pride in one's work.

Variable Number	Statement Number	Statement
715	32	To what extent are you proud of your job?
275	46	To what extent does your work give you a feeling of pride?

Factor 812 - Task Characteristics: A combination of skill variety, task identity, task significance, and job feedback designed to measure several aspects of one's job.

Variable Number	Statement Number	Statement
201	17	To what extent does your job require you to do many different things, using a variety of your talents and skills?
202	18	To what extent does your job involve doing a whole task or unit of work?
203	19	To what extent is your job significant, in that it affects others in some important way?
272	22	To what extent are you able to determine how well you are doing your job without feedback from anyone else?
209	26	To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?

210	27	To what extent does doing your job well affect a lot of people?
211	28	To what extent does your job provide you with a chance to finish completely the piece of work you have begun?
212	29	To what extent does your job require you to use a number of complex skills.

Factor 813 - Task Autonomy: Measures the degree to which the job provides freedom to do the work as one sees fit; discretion in scheduling, decision making, and means for accomplishing a job.

Variable Number	Statement Number	Statement
270	20	To what extent does your job provide a great deal of freedom and independence in scheduling your work?
271	21	To what extent does your job provide a great deal of freedom and independence in selecting your own procedures to accomplish it?
213	30	To what extent does our job give you freedom to do your own work as you see fit.
214	31	To what extent are you allowed to make the major decisions required to perform your job well?

Factor 814 - Work Repetition: Measures the extent to which one performs the same tasks or type of problems in his or her job on a regular basis.

Variable Number	Statement Number	Statement
226	39	To what extent do you perform the same tasks repeatedly within a short period of time
227	40	To what extent are you faced with the same type of problem on a weekly basis?

Factor 816 - Desired Repetitive Easy Tasks: Measures the extent to which

one desires his or her job involve repetitive tasks or tasks that are easy

to accomplish.

Variable Number	Statement Number	Statement
255	56	A job in which tasks are repetitive.
258	57	A job in which tasks are relatively easy to accomplish.

Factor - Job Influence (Not a Statistical Factor):

Variable Number	Statement Number	Statement
216	33	To what extent do you feel accountable to your supervisor in accomplishing your job?
238	42	To what extent do co-workers in your work group maintain high standards of performance?

Factor 817 - Advancement/Recognition: Measures ones awareness of

advancement and recognition, and feelings of being prepared (i.e.,

learning new skills for promotion).

Variable Number	Statement Number	Statement
734	41	To what extent are You aware of promotion/advancement opportunities that affect you?
239	43	To what extent do you have the opportunity to progress up your career ladder?
240	44	To what extent are you being prepared to accept increased responsibility?
241	45	To what extent do people who perform well receive recognition?
276	47	To what extent do you have the opportunity to learn skills which will improve your promotion potential?

Factor 818 - Management and Supervision (A): Measures the degree to

which the worker has high performance standards and good work

procedures. Measures support and guidance received, and the overall

quality of supervision.

Variable Number	Statement Number	Statement
404	58	My supervisor is a good planner.

405	59	My supervisor sets high performance standards.
410	60	My supervisor encourages teamwork.
411	61	My supervisor represents the group at all times.
412	62	My supervisor establishes good work procedures.
413	63	My supervisor has made his responsibilities clear to the group.
445	64	My supervisor fully explains procedures to each group member.
416	65	My supervisor performs well under pressure.

Factor Management and Supervision (B): (Not A Statistical Factor)

Variable Number	Statement Number	Statement
424	66	My supervisor takes time to help me when needed.
434	71	My supervisor lets me know when I am doing a poor job.
439	75	When I need technical advice, I usually go to my supervisor.

Factor 819 - Supervisory Communications Climate: Measures the degree to

which the worker perceives that there is a good rapport with supervisor,

that there is a good working environment, that innovation for task

improvement is encouraged, and that rewards are based upon performances

Variable Number	Statement Number	Statement
426	67	My supervisor asks members for their ideas on task improvements.
428	68	My supervisor explains how my job contributed to the over all mission.
431	69	My supervisor helps me set specific goals.
433	70	My supervisor lets me know when I am doing I good job.
435	72	My supervisor always helps me improve my performance.
436	73	My supervisor insures that I get job related training when needed.
437	74	My job performance has improved due to feedback received from my supervisor.
442	76	My supervisor frequently gives me feedback on how well I am doing my job.

Factor 820 - Organizational Communications Climate: Measures the degree

to which the worker perceives that there is an open communications

environment in the organization, and that adequate information is provided

to accomplish the job.

Variable Number	Statement Number	Statement
300	82	Ideas developed by my work group are readily accepted by management personnel above my supervisor.
301	83	My organization provides all the necessary information for me to do my job effectively.
302	84	My organization provides adequate information to my work group.
303	85	My work group is usually aware of important events and situations.
304	86	My complaints are aired satisfactorily.
309	91	The information in my organization is widely shared so that those needing it have it available.
314	96	My organization has clear-cut goals.
317	99	The goals of my organization are reasonable.
318	100	My organization provides accurate information to my work group.

Factor 821 - Work Group Effectiveness: Measures one's view of the quantity, quality, and efficiency of work generated by his or her work group.

Variable Number	Statement Number	Statement
259	77	The quantity of output of your work group is very high.

260	78	The quality of output of your work group is very high.
261	79	When high priority work arises, such as short suspenses, crash programs, and schedule changes, the people in my work group do an outstanding job in handling these situations.
264	80	Your work group always gets maximum output from available resources (e.g., personnel and material).
265	81	Your work group's performance in comparison to similar work groups is very high.

Factor Work Interferences (Not A Statistical Factor): Identifies things that impede an individual's job performance.

Variable Number	Statement Number	Statement
277	48	To what extent do you have the necessary supplies to accomplish your job?
278	49	To what extent do details (task not covered by primary or additional duty descriptions) interfere with the performance of your primary job?
279	50	To what extent does a bottleneck in your organization seriously affect the flow of work either to or from your group?

Factor 822 - Job Related Satisfaction: Measures the degree to which the

worker is generally satisfied with factors surrounding the job.

Variable Number	Statement Number	Statement
705	101	Feeling of Helpfulness The chance to help people and improve their welfare through the performance of my job. The importance of my job performance to the welfare of others.
709	102	Co-worker Relationships My amount of effort compared to the effort of my co-workers, the extent to which my coworkers share the load, and the spirit of teamwork which exists among my coworkers.
710	103	Family Attitude Toward The recognition and the pride my family has in the work I do.
717	106	Work Schedule My work schedule; flexibility and regularity of my work schedule; the number of hours I work per week.
718	107	Job Security
719	108	Acquired Valuable Skills The chance to acquire valuable skills in my job which prepare me for future opportunities.
723	109	My Job as a Whole

Factor 823 - Job Related Training: Measures the degree to which one is

satisfied with on-the-job and technical training received.

Variable Number	Statement Number	Statement
711	104	On-the-job Training (OJT) The OJT instructional methods and instructors competence.
712	105	Technical Training (Other than OJT) The technical training I have received to perform my current job.

Factor 824 - General Organizational Climate: Measures the Individual's

perception of his or her organizational environment as a whole (i.e.,

spirit of teamwork. communications. organizational pride, etc.)

Variable Number	Statement Number	Statement
305	87	My organization is very interested in the attitudes of the group members toward their jobs.
306	88	My organization has a very strong interest in the welfare of its people.
307	89	I am very proud to work for this organization.
308	90	I feel responsible to my organization in accomplishing its mission.
310	92	Personnel in my unit are recognized for out-standing performance.

311	93	I am usually given the opportunity to show or demonstrate my work to others.
312	94	There is a high spirit of teamwork among my co-workers.
313	95	There is outstanding cooperation between work groups of my organization.
315	97	I feel motivated to contribute my best efforts to the mission of my organization.
316	98	My organization rewards individuals based on performance.

Factor 825 - Motivation Potential Score: This factor is another variation of a scale employed by other job motivation theorists. The score ranges between 1 and 343 with 109 being the Air Force average. Low scores indicate a poorly motivating job. Score is computed using the following factors.

800	Skill Variety
801	Task Identity
802	Task Significance
804	Job Feedback
813	Task Autonomy

Formula $((800 + 801 + 802) / 3) * 813 * 804$

Table 13 - ANOVA of OAP Work Itself Factors
by Career Field (using Tukey's HSD)

Factors	Manufacturing Mean SD Sig Diff	Contracting Mean SD Sig Diff	Acquisition Mean SD Sig Diff	All Others Mean SD Sig Diff	F Prob > F
Job Desires (Need for Enrichment)	30.30 4.11	29.71 4.86	30.39 4.04	30.47 4.40	1.66 0.1723
Job Performance Goals	25.15 4.57	25.76 3.57 * +	24.49 4.13 * α	26.08 3.93 + α	177.21 0.0001
Task Charac- teristics	35.66 5.99 *	38.12 5.65 +	36.17 6.61 + α	39.22 6.16 * α	153.17 0.0001
Task Autonomy	19.50 3.50	17.85 4.14 *	19.27 4.61 * +	18.87 4.87 +	6.78 0.0001
Work Repetition	7.50 2.87 *	8.11 2.46 + α	7.10 2.59 + =	8.77 2.72 * α =	244.22 0.0001
Desired Repetitive Easy Tasks	5.00 1.36	5.03 1.83 *	4.55 1.81 * +	5.00 2.12 +	28.94 0.0001
Job Related Training	8.00 3.51 *	8.68 3.23 +	8.21 3.08 α	9.57 2.91 * + α	117.98 0.0001

The means with the same mark (*, +, α, =) are significantly different at 0.05 level.

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Table 14 - ANOVA of OAP Job Enrichment Factors
by Career Field (using Tukey's HSD)

Factors	Manufacturing Mean SD Sig Diff	Contracting Mean SD Sig Diff	Acquisition Mean SD Sig Diff	All Others Mean SD Sig Diff	F Prob > F
Skill Variety	6.77 1.50	7.53 1.38	7.55 1.75 *	8.10 1.79 *	44.24 0.0001
Task Identity	10.20 2.02 *	10.62 2.06 +	9.96 2.33 + α	10.92 2.16 * α	210.11 0.0001
Task Significance	9.38 2.64 *	10.69 2.16 +	9.66 2.54 + α	11.03 5.25 * α	112.36 0.0001
Job Feedback	8.93 2.29	9.41 2.23	9.14 2.43 *	9.91 2.23 *	15.06 0.0001
Job Motivation Index	1770.77 881.45	1752.12 868.86 *	1813.89 953.08 +	2007.25 1016.65 * +	27.00 0.0001
OJI Total Score	66.36 9.61	67.13 9.29 *	66.79 10.93 +	69.73 10.43 * +	47.21 0.0001
Job Motivation Index Additive	38.06 6.41	36.95 6.74	37.75 7.54 *	38.66 7.62 *	10.01 0.0001
Motivation Potential Score	1660.19 884.77	1682.99 877.37 *	1722.92 968.98 +	1956.53 1035.20 * +	34.59 0.0001

The means with the same mark (*, +, α) are significantly different at 0.05 level.

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Table 15 - ANOVA of OAP Work Group Process Factors
by Career Field (using Tukey's HSD)

Factors	Manufacturing Mean SD Sig Diff	Contracting Mean SD Sig Diff	Acquisition Mean SD Sig Diff	All Others Mean SD Sig Diff	F Prob > F
Performance Barriers/ Blockages	11.55 0.61	11.41 0.66 *	11.49 0.71	11.36 0.79 *	19.62 0.0001
Management & Supervision	46.71 7.23 *	41.94 10.61	41.13 10.57 * +	42.99 10.64 +	19.86 0.0001
Supervisory Communication Climate	43.24 11.24	38.33 11.65	37.52 11.34 *	39.45 11.33 *	18.42 0.0001
Organizational Communication Climate	42.31 12.26	43.63 11.23 *	41.06 11.12 * +	44.57 11.43 +	56.68 0.0001

The means with the same mark (*, +) are significantly different at 0.05 level.

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Table 16 - ANOVA of OAP Work Group Output Factors
by Career Field (using Tukey's HSD)

Factors	Manufacturing Mean SD Sig Diff	Contracting Mean SD Sig Diff	Acquisition Mean SD Sig Diff	All Others Mean SD Sig Diff	F Prob > F
Pride	10.47 2.92	10.53 2.77 *	9.86 3.04 * +	11.11 2.72 +	130.07 0.0001
Advancement/ Recognition	26.00 5.71 *	23.86 5.94 +	22.03 5.77 * + α	23.13 6.01 α	23.14 0.0001
Work Group Effective- ness	29.07 5.18	29.23 4.54	28.13 5.65 *	29.10 5.30 *	20.54 0.0001
Job Related Satisfaction	37.65 6.98	39.07 6.43 *	37.16 7.33 * +	37.83 7.62 +	5.77 0.0006
General Organizational Climate	52.33 13.54	51.10 12.09	48.55 12.54 *	52.57 12.56 *	61.61 0.0001

The means with the same mark (*, +, α) are significantly different at 0.05 level.

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Table 17 - ANOVA of Motivating Potential Scores
by Career Field (using Tukey's HSD)

Factors	Manufacturing Mean SD Sig Diff	Contracting Mean SD Sig Diff	Acquisition Mean SD Sig Diff	All Others Mean SD Sig Diff	F Prob > F
MPS	103.76	105.19	107.68	122.28	34.59
	55.30	54.84	60.56	64.70	0.0001
		*	+	* +	

The means with the same mark (*, +) are significantly different at 0.05 level.

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This study evaluates the job attitudes of manufacturing officers, contracting officers, acquisition officers, in comparison with all other Air Force officers. The purpose of this research was to determine whether moving the organizational location of the manufacturing career group from the contracting organization to the acquisition organization would improve job attitudes. The Organizational Assessment Package, from the Leadership and Management Development Center, was used as the research tool and data source for this study. The results showed that there was no support for the assumption that manufacturing officer's job attitudes would increase due to reorganization, although there was evidence that their attitudes were similar to acquisition officers. Manufacturing, contracting, and acquisition officers as a whole have lower job attitudes than all the other Air Force officers. This is probably a result of inadequate training and education, over regulation of government procurement, and insufficient authority and responsibility for their work. Keywords:

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